

FORGOTTEN RACIAL EQUALITY: IMPLICIT BIAS, DECISIONMAKING, AND MISREMEMBERING

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ABSTRACT

In this Article, I claim that judges and jurors unknowingly misremember case facts in racially biased ways. Drawing upon studies from implicit social cognition, human memory research, and legal decisionmaking, I argue that implicit racial biases affect the way judges and jurors encode, store, and recall relevant case facts. I then explain how this phenomenon perpetuates racial bias in case outcomes. To test the hypothesis that judges and jurors misremember case facts in racially biased ways, I conducted an empirical study in which participants were asked to recall facts of stories they had read only minutes earlier. Results of the study confirmed the hypothesis that participants remembered and misremembered legally relevant facts in racially biased ways. For example, participants who read about an African-American story character were significantly more likely to remember aggressive facts from the story than participants who read about a Caucasian story character. Other results indicated that these racial memory biases were not related to explicit racial preferences.

The presence and power of implicit memory bias in legal decisionmaking raises concerns about the legal system's ability to achieve social justice. Multifaceted responses, including debiasing techniques and cultural change efforts, are needed. Debiasing

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techniques, which use interventions such as diversity training to lessen the negative effects of implicit bias, hold promise for at least temporarily reducing the harms of implicit memory bias. The response with the greatest permanent potential, however, requires embracing cultural responsibility for the presence of negative racial stereotypes and coordinating efforts for change.

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THE CONFRONTATION

Tyronne, a 23 year old African American man, first encountered James when they accidentally bumped elbows in a crowded bar. An hour after leaving the bar, Tyronne and a friend spotted James outside a local diner. They approached James slowly, and Tyronne said: "Why did you bump into me back there?" James said: "Hey listen . . . it sounds like you had too much to drink. Let it go." Tyronne's friend took a step towards James and said: "What if we won't let it go?" When he took another step towards James, James moved forward, shoved him with both hands, and said: "Get out of my face." Without hesitating, Tyronne then stepped forward and tried to shove James in the chest, but missed and hit him in the face. James fell back slightly. He then turned around, took a couple steps away from Tyronne, and appeared to reach for something in his pocket. Tyronne quickly pursued James from behind and punched him in the side of the head. James fell to the ground. Tyronne's friend stepped forward and kicked James.

INTRODUCTION

Judges and jurors may unintentionally and automatically "misremember" facts in racially biased ways during all facets of the legal decisionmaking process. In delegating both factfinding and decisionmaking authority to judges and juries, the American legal system makes a supposedly elementary but unsupported psychological assumption—that these individuals can cognitively process, evaluate, and weigh the facts that were presented during

trial.¹ The accuracy of this assumption has been challenged by behavioral law and economics scholars, who have demonstrated that cognitive biases affect the way people process information.² Yet perhaps an even more vulnerable part of this psychological assumption is implicated by systematic biases in memory recall. Unlike most cognitive biases, which are assumed to operate independent of race, unintentionally biased memory failures by judges and jurors may propagate racial biases through the legal process itself. Despite this challenge to basic assumptions of legal decisionmaking, scholarship has not yet examined whether judicial factfinders and decisionmakers systematically “misremember” facts in racially biased ways. This Article undertakes such an examination and concludes that implicit memory biases taint the legal decisionmaking process.

Since the late 1980's, legal scholars have identified various ways in which unconscious or implicit racial biases³ influence the legal

1. See Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. CHI. L. REV. 511, 551 (2004) (“The prevailing trial design rests on the assumption that the complex and vast amount of testimony, presented over the course of days and weeks, can be encoded, retained, and retrieved from memory in an unaltered state. . . . [But] [t]he findings from coherence-based reasoning research are markedly inconsistent with these assumptions.”).

2. These scholars aim to create a psychologically accurate model of legal decisionmaking. See Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1489–1508 (1998); Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post ≠ Ex Ante: Determining Liability in Hindsight*, 19 LAW & HUM. BEHAV. 89, 99–101 (1995); Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1256–92 (2003); Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571, 588–95 (1998). Some cognitive biases, such as the hindsight bias, operate in close connection with memory processes. See Rachlinski, *supra* at 575. By separating behavioral law and economics discussions from my discussion of implicit memory biases, I do not mean to imply that other cognitive biases do not involve memory. To the contrary, many cognitive biases, such as hindsight bias, the availability heuristic, and primacy/recency effects, operate inextricably with the human memory.

3. Early legal scholarship frequently referred to “unconscious” racism and drew upon psychoanalytic models, such as Charles Lawrence’s use of Freudian discourse. See Charles R. Lawrence III, *The Id, the Ego, and Equal Protection: Reckoning with Unconscious Racism*, 39 STAN. L. REV. 317, 331–36 (1987). Subsequent legal scholarship has relied upon scientific methodology rather than Freudian discourse, and therefore uses the term “implicit” to describe attitudes, memories, and stereotypes that are outside of “conscious, attentional control.” Anthony G. Greenwald & Linda Hamilton Krieger, *Implicit Bias: Scientific Foundations*, 94 CAL. L. REV. 945, 946 (2006); see also Jerry Kang, *Trojan Horses of Race*, 118 HARV. L. REV. 1489, 1497–1539 (2005) (explaining the foundations of scientific research on implicit attitudes). While the words “implicit” and “unconscious” describe similar concepts, some psychologists have cautioned against using them interchangeably because people can occasionally possess some awareness of their automatic and implicit attitudes. See Russell H. Fazio & Michael A.

process.⁴ One significant methodology has involved examining the specific harms caused by implicit racial biases, such as the connection between implicit racial attitudes and acts of employment discrimination.⁵ Another methodology has involved evaluating the unintentional biasing implications of legislative and administrative efforts.⁶ As scientific research methods continue to improve in rigor, scholars continue to learn more about the implicit nature of racial biases and stereotypes and how the legal system frequently ignores them.

Shifting gears momentarily, I now return to *The Confrontation*, the story presented at the beginning of this Article (but please do not look back at the story just yet). Here is a brief memory quiz about the story. Do the following facts accurately describe a piece of *The Confrontation* story? (Answer yes or no to each question.) (1) Tyronne kicked James. (2) James pushed Tyronne. (3) Tyronne tried to push James in the chest, but missed and hit him in the face. Does the quiz seem easy? Well, it might (check the answers in the footnote below).⁷ But make the facts slightly more complicated (like a real case), and it might be harder to remember.⁸ And simply change Tyronne's race from African American to Caucasian (and his name to William) and some facts may actually be remembered differently. Not

Olson, *Implicit Measures in Social Cognition Research: Their Meanings and Use*, 54 ANN. REV. PSYCHOL. 297, 303 (2003). See *infra* Part I for a more detailed discussion of implicit social cognition, including examples of how researchers measure implicit racial attitudes and biases. See *infra* Part II for examples of scholarship on memory, a field that uses the term "implicit," and, in particular, see Greenwald & Krieger, *supra* note 3, at 947 (citing Daniel Schacter, *Implicit Memory: History and Current Status*, 13 J. EXPERIMENTAL PSYCHOL: LEARNING, MEMORY & COGNITION 501 (1987)). In this Article, I generally use the term "implicit" rather than "unconscious," except when reviewing research (such as Lawrence's) that uses the term "unconscious."

4. See Kang, *supra* note 3, at 1549–50; Linda Hamilton Krieger, *The Content of Our Categories: A Cognitive Bias Approach to Discrimination and Equal Employment Opportunity*, 47 STAN. L. REV. 1161, 1166–86 (1995); Lawrence, *supra* note 3, at 342–43.

5. See, e.g., Krieger, *supra* note 4, at 1170.

6. See Kang, *supra* note 3, at 1568.

7. Here are the quiz answers. Question 1: No. This statement is inaccurate. Tyronne did not kick James. Tyronne's friend kicked James. Question 2: No. This statement is also inaccurate. James pushed Tyronne's friend, not Tyronne. Question 3: Yes. This statement is accurate.

8. Research has suggested that jurors may not remember much more than half of the information presented at trial. See Mary E. Pritchard & Janice M. Keenan, *Does Jury Deliberation Really Improve Jurors' Memories?*, 16 APPLIED COGNITIVE PSYCHOL. 589, 600 (2002) (finding mock jurors who watched a thirty-five minute video of a case "could remember only about 60% of the trial material tested").

convinced? Read on, or perhaps skip ahead to the empirical study I conducted,⁹ which illustrates that these memory-driven implicit biases can occur in a systematic fashion.

The empirical study I conducted investigated whether implicit racial bias affects how mock jurors remember legal facts. I asked study participants to read the facts of legal stories (one is an expanded version of *The Confrontation*¹⁰), briefly distracted their attention,¹¹ and then quizzed their memories of the facts. The actors' race served as the independent variable—people read about either William (a Caucasian), Kawika (a Hawaiian), or Tyronne (an African American).¹² The results of the study demonstrate that the race of a civil plaintiff or a criminal defendant can act implicitly to cause people to misremember a case's facts in racially biased ways. For example, study participants who read about Tyronne were more likely to remember aggressive facts from *The Confrontation* than were study participants who read about William.¹³ The results also show that susceptibility to misremembering facts based on race cannot be attributed simply to more overtly racist people—those who were susceptible to racial misremembering sometimes embraced less explicitly racist attitudes.

This Article, including the empirical study I conducted, brings together theories and methods from both legal discourse on unconscious racism and psychology studies of implicit social cognition and memory processes. It is structured as follows: Part I begins by offering psychological evidence of implicit racial bias. It details studies in which people's implicit racial attitudes and stereotypes have been measured in novel, yet methodically rigorous ways. Then it looks at how legal commentators have incorporated this psychological knowledge into critiques of legal theory. It notes that little or no

9. See *infra* Part III.

10. See *infra* Part III.A.2.

11. I attempted to create a similar effect for readers of this Article by pausing after presenting *The Confrontation* for two paragraphs before asking the basic recall questions. Almost all memory studies on recall provide a brief distraction task between presenting the task and testing recall. See *infra* Part II for examples of memory studies.

12. For one case, participants read an expanded version of *The Confrontation*. In the other story they read about an employment termination scenario. Names and races were similarly varied in the independent variable condition. In both cases, participants were told the race of the actor in the story they read. Thus, for example, participants who read about "William" were explicitly told in the story that William was Caucasian.

13. For detailed results, see *infra* Part III.

empirical work has been conducted to determine whether implicit racial bias may affect judge and juror memories of case facts.

Part II investigates the intricacies and errors of human memory processes and discusses the intimate connection between memory and legal decisionmaking. Based upon the research discussed in Parts I and II, I argue that implicit bias likely affects legal decisionmaking by altering judge and jury memories of case facts. Part III details the empirical study I conducted, which tested whether manipulating the race of actors in a legal scenario would affect how accurately people recalled the story's events. The study showed that for some facts, simply altering a legal actor's race caused participants to remember certain facts or generate false memories in racially biased ways.

Part IV begins by pointing out that implicit biases are not errors caused by scientific quirks, but are meaningful manifestations of social and cultural norms. Yet until a broader cultural solution to implicit biases emerges through time, learning, and change strategies, the legal decisionmaking process will continue to transmit racial biases implicitly. Thus, this Part addresses a debiasing model that can help moderate or even temporarily eliminate implicit memory biases. These solutions include (1) using debiasing techniques to block stereotypes and enhance memory, (2) striving for more counterstereotypic legal professionals and more diverse juries, and (3) implementing more widespread procedural changes such as juror note taking and question asking.

I. IMPLICIT RACIAL BIAS EXPOSED: PSYCHOLOGICAL EVIDENCE AND LEGAL DISCOURSE

Since the 1990's, a number of studies have deconstructed the complicated ways in which the human mind maintains and manifests racially biased implicit attitudes¹⁴ and stereotypes.¹⁵ Many of these

14. According to social cognition researchers, an "attitude" is "an evaluative disposition—that is, the tendency to like or dislike, or to act favorably or unfavorably toward, someone or something." Greenwald & Krieger, *supra* note 3, at 948. A racial attitude, for example, would be the tendency to like or dislike members of a certain race. Researchers define an "implicit attitude" as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate attributions of qualities to members of a social category." *Id.* (citing Anthony Greenwald & Mahzarin Banaji, *Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes*, 102 PSYCHOL. REV. 4 (1995)).

15. According to social cognition researchers, a social "stereotype" is "a mental association between a social group or category and a trait." Greenwald & Krieger, *supra* note 3, at 949. One

studies have reached the same conclusion—that implicit biases¹⁶ are real, pervasive, and difficult to change.¹⁷ Responding to the growing scientific proof of implicit bias, legal commentators have called for various types of reform.¹⁸ Reform-minded scholars have, for example, focused on the relationship between discriminatory acts triggered by implicit bias (such as employment decisions) and the failure of legal rules to properly guard against or provide recourse for such acts.¹⁹ These works often critique a substantive legal rule or construct (such as the intent doctrine²⁰) in light of psychological evidence that indicates that such rule or construct fails to truly understand the implicit nature of racism.²¹ Although such works have made great progress in discussing the relationship between substantive legal rules and implicit racial bias, less progress has been made in studying how implicit racial bias affects legal processes such as judicial rulings and jury decisionmaking.²²

In order to develop fully a theory on how implicit racial bias might affect judicial rulings and jury decisionmaking, I draw on three distinct areas of scholarship on implicit bias: (1) empirical psychological studies that document various forms of implicit racial bias; (2) detailed legal arguments that call for reform of legal tests to match cognitive and racial realities, and (3) cognitive science studies

example is the stereotype that elderly people drive slowly. *Id.* Greenwald and Krieger point out that stereotypes can be positive or negative. *Id.* at 950.

16. According to Greenwald and Krieger, a bias is “a displacement of people’s responses along a continuum of possible judgments.” *Id.* at 950. Implicit biases are “discriminatory biases based upon implicit attitudes or implicit stereotypes.” *Id.* at 951.

17. See, e.g., Joshua Correll et al., *The Police Officer's Dilemma: Using Ethnicity to Disambiguate Potentially Threatening Individuals*, 83 J. PERSONALITY & SOC. PSYCHOL. 1314, 1321 (2002); Anthony Greenwald et al., *Measuring Individual Differences in Implicit Cognition: The Implicit Association Test*, 74 J. PERSONALITY & SOC. PSYCHOL. 1464, 1478 (1998).

18. See Kang, *supra* note 3, at 1568–72; Krieger, *supra* note 4, at 1241–47; Lawrence, *supra* note 3, at 355–56.

19. See Krieger, *supra* note 4, at 1169.

20. See *infra* notes 93–98.

21. See Krieger, *supra* note 4, at 1213; Lawrence, *supra* note 3, at 324–25.

22. Some authors, such as those examining peremptory challenges, focus on the intersection of substantive rules and legal processes. See Antony Page, *Batson's Blind-Spot: Unconscious Stereotyping and the Peremptory Challenge*, 85 B.U. L. REV. 155, 180–207 (2005) (thoroughly outlining research on implicit racial bias); see also Theodore Eisenberg & Sheri Lynn Johnson, *Implicit Racial Attitudes of Death Penalty Lawyers*, 53 DEPAUL L. REV. 1539, 1553 (2004) (empirically examining and finding implicit bias even among a group of death penalty defense lawyers); Darren Seiji Teshima, *A “Hardy Handshake Sort of Guy”: The Model Minority and Implicit Bias About Asian Americans in Chin v. Runnels*, 11 ASIAN PAC. AM. L.J. 122, 133–36 (2006) (focusing on the role of implicit bias in grand jury foreperson selection).

that show the fragility of the human memory and connect memory failures to racial biases. This Part tackles the first two of these areas, and Part II addresses the third.

A. Psychological Evidence of Implicit Racial Bias

Implicit racial bias materializes in various forms and can affect the legal process in many ways. One possible, and troubling, way that implicit racial bias may manifest in legal decisionmaking is through biased memories. In this Article, I argue that implicit racial bias automatically causes jurors (and perhaps even judges)²³ to misremember case facts in racially biased ways. These racially biased memory errors will distort case facts in ways that are completely unknown to the juror but prejudicial to the legal actor (for example, a criminal defendant or a plaintiff in an employment discrimination claim). Thus, the argument draws upon research in two related psychological areas—social cognition research and studies on human memory.²⁴ Social cognition studies on bias explore the vast role of often automatic cognitive processes in decisionmaking. Memory studies, including those conducted using social cognition methodologies, reveal the vast powers of the human mind, but also the systematic failures of the human mind's ability to recall certain facts. In combination with memory theories that reveal systematic shortcomings of human recall, social cognition research provides

23. In this Article, I argue that implicit memory biases will likely affect both juries and judges. Some readers might prefer to see me address only jury decisionmaking in this context. After all, the empirical study I conducted focuses more closely on mock jurors, not on judges. Nonetheless, in light of evidence detailing systematic errors in a wide range of human cognitions, it is important not to leave judges out of the discussion. Research on judicial versus jury decisionmaking biases appears to corroborate the decision to include judges as possible propagators of implicit memory bias. See Chris Guthrie et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 784 (2001) (finding that judges, although sometimes less susceptible to biases than other experts and laypersons, still exhibit systematic cognitive biases); Donald C. Nugent, *Judicial Bias*, 42 CLEV. ST. L. REV. 1, 19–21 (1994) (arguing that a judge's background, beliefs, and attitudes result in "many distorted and systematically biased decisions"); Jennifer K. Robbenolt, *Evaluating Juries by Comparison to Judges: A Benchmark for Judging?*, 32 FLA. ST. U. L. REV. 469, 505 (2005) ("There are certain types of errors that are made by both jurors and judges."); Andrew J. Wistrich et al., *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1259 (2005) (finding that "some types of highly relevant, but inadmissible, evidence influenced judges' decisions" but that "judges were able to resist the influence of such information in at least some cases"). For the sake of brevity, this Article will only occasionally repeat "and judges."

24. Some research on memory falls under the umbrella of social cognition because of its focus on cognitive processes. For conceptual ease, I review research in memory studies and errors, *infra* Part II, separately from research on social cognition, *infra* Part I.

empirically solid ground for the prediction that implicit racial attitudes and stereotypes are powerful enough and scientifically reliable enough to affect jury memories in biased ways.

1. *Implicit Social Cognition.* Much of the existing evidence of implicit racial bias comes from the field of social cognition.²⁵ Social cognition research analyzes how people think about themselves and others,²⁶ often using methods from cognitive psychology to investigate how the human mind works.²⁷ The area of social cognition thus includes work on a wide range of topics, including attribution theory, schemas, the self, reasoning processes and decisionmaking, memory, and attitudes.²⁸ It should come as no surprise, then, that social cognition research also examines stereotypes, biases, and intergroup relations. In her groundbreaking work on unconscious bias and employment discrimination, Linda Hamilton Krieger provides three overarching themes of social cognition research on biases and stereotypes, each of which she relates to bias in the workplace: (1) normal cognitive processes automatically trigger stereotyping,²⁹ (2) stereotypes and biases operate absent an explicit intent to use them,³⁰ and (3) “people’s access to their own cognitive processes is in fact poor.”³¹ Thus, studies in social cognition have illustrated that racial attitudes and stereotypes are both automatic and implicit. That is, people possess attitudes and stereotypes over which they have little or no “conscious, intentional control.”³²

A now-famous example of social cognition research on implicit racial bias comes from Mahzarin Banaji, Anthony Greenwald, and

25. See, e.g., Kang, *supra* note 3, at 1495–96.

26. SUSAN T. FISKE & SHELLEY E. TAYLOR, *SOCIAL COGNITION* 19 (2d ed. 1991).

27. *Id.* at 2.

28. *Id.*

29. Krieger, *supra* note 4, at 1188. See generally John A. Bargh et al., *Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action*, 71 J. PERSONALITY & SOC. PSYCHOL. 230 (1996) (providing more background on the automaticity of stereotypes); John A. Bargh et al., *The Generality of the Automatic Attitude Activation Effect*, 62 J. PERSONALITY & SOC. PSYCHOL. 893 (1992) (same).

30. Krieger, *supra* note 4, at 1188.

31. *Id.* Social cognition researchers label this as “dissociation”—the gap between implicit and explicit attitudes. See Fazio and Olson, *supra* note 3, at 303; Kang, *supra* note 3, at 1513; see also Laurie A. Rudman, *Social Justice in Our Minds, Homes, and Society: The Nature, Causes, and Consequences of Implicit Bias*, 17 SOC. JUST. RES. 129, 133 (2004) (summarizing the automatic, unintentional, and possibly unconscious nature of implicit biases).

32. See Greenwald & Krieger, *supra* note 3, at 946.

their colleagues, who began using the Implicit Association Test in the 1990s.³³ The Implicit Association Test (IAT) pairs an attitude object (such as a racial group) with an evaluative dimension (good or bad) and tests how response accuracy and speed indicate implicit and automatic attitudes³⁴ and stereotypes.³⁵ In the computerized version of the IAT, participants sit at a computer and keyboard and are asked to pair an attitude object (for example, Black or White, man or woman, fat or thin) with either an evaluative dimension (for example, good or bad) or an attribute dimension (for example, home or career, science or arts) by pressing a response key as quickly as they can.³⁶ For example, in one task, participants are told to quickly pair together pictures of African-American faces with positive words from the evaluative dimension. The speed at which the participants can pair the words together signifies the strength of the attitude (or in the case of attributes, the strength of the stereotype).³⁷ As described by Nilanjana Dasgupta and Anthony Greenwald, “[w]hen highly associated targets and attributes share the same response key, participants tend to classify them quickly and easily, whereas when weakly associated targets and attributes share the same response key, participants tend to classify them more slowly and with greater difficulty.”³⁸ As demonstrated by Banaji, Greenwald, and their colleagues’ in their landmark studies³⁹ (and in numerous follow-ups),⁴⁰

33. See Greenwald et al., *supra* note 17, at 1464–65; Greenwald & Banaji, *supra* note 14, at 14–19 (1995) (describing research demonstrating implicit stereotypes).

34. Greenwald & Banaji, *supra* note 14, at 7–10; see also *supra* note 14 (providing a definition of “attitude”).

35. For more detail on implicit attitudes and use of the IAT to measure them, see Mahzarin Banaji, *Implicit Attitudes Can Be Measured*, in *THE NATURE OF REMEMBERING: ESSAYS IN HONOR OF ROBERT G. CROWDER* 117, 123–24 (Henry L. Roediger, III et al. eds. 2001), and Greenwald & Banaji, *supra* note 14, at 14–19. For a definition of “stereotype,” see *supra* note 15.

36. Banaji, *supra* note 35, at 123.

37. *Id.*; Greenwald et al., *supra* note 17, at 1465.

38. Nilanjana Dasgupta & Anthony G. Greenwald, *On the Malleability of Automatic Attitudes: Combating Automatic Prejudice with Images of Admired and Disliked Individuals*, 81 J. PERSONALITY & SOC. PSYCHOL. 800, 803 (2001).

39. See, e.g., Greenwald & Banaji, *supra* note 14, at 14–19.

40. Research on the IAT is quite voluminous, with one often contested area of study on the IAT relating to the validity of the measurements. See, e.g., C. Miguel Brendl et al., *How Do Indirect Measures of Evaluation Work? Evaluating the Inference of Prejudice in the Implicit Association Test*, 81 J. PERSONALITY & SOC. PSYCHOL. 760, 768–71 (2001); Alan J. Lambert et al., *On the Predictive Validity of Implicit Attitude Measures: The Moderating Effect of Perceived Group Variability*, 41 J. EXPERIMENTAL SOC. PSYCHOL. 114, 115–16 (2005).

study participants consistently demonstrate implicit attitudes and stereotypes in areas including race and gender, among others.⁴¹ The time measurement variable used in the IAT allows researchers to determine that it generally takes longer for people to group together, for example, images of Black faces with positive words than it does for them to group together Black faces and negative words.⁴² Examination of hundreds of thousands of IATs taken on the IAT project's website confirms the systematic display of implicit racial biases.⁴³

In addition to the evidence provided by the IAT, implicit racial bias has been documented using a variety of methodologies.⁴⁴ One series of studies uses custom-made video games to examine the race-

41. See, e.g., Greenwald et al., *supra* note 17, at 1470–76 (describing IAT data showing biases in Korean-American perceptions about Japanese Americans, Japanese-American perceptions about Korean Americans, and White American perceptions about Black Americans); Anthony G. Greenwald & Shelly D. Farnham, *Using the Implicit Association Test to Measure Self-Esteem and Self-Concept*, 79 J. PERSONALITY & SOC. PSYCHOL. 1022, 1027–31 (2000) (using the IAT to measure gender self-concept); D. Maison et al., *The Implicit Association Test as a Measure of Implicit Consumer Attitude*, 32 POLISH PSYCHOL. BULL. 1, 2 (2001) (studying “implicit consumer attitudes with the use of the IAT”); Brian Nosek et al., *Harvesting Implicit Group Attitudes and Beliefs from a Demonstration Website*, 6 GROUP DYNAMICS 101, 102 (2002) (reporting results from six hundred thousand IATs on the popular online website, including significant Black-White IAT results). Dozens of IAT tests are available at IAT Corp., Project Implicit, <https://implicit.harvard.edu> (last visited Nov. 12, 2007).

42. See Dasgupta & Greenwald, *supra* note 38, at 801; Greenwald et al., *supra* note 17, at 1474; Nosek et al., *supra* note 41, at 105 (reporting “respondents’ automatic preference for White relative to Black”).

43. Nosek et al., *supra* note 41, at 105. Although the results of these studies are compelling, it should be understood that not everyone demonstrates implicit bias on the IAT. There are a small number of people who show no preference on the various IAT’s, including the White-Black IAT. Brian Nosek et al., *Pervasiveness and Correlates of Implicit Attitudes and Stereotypes*, 18 EUR. REV. SOC. PSYCHOL. (2007) (authors’ courtesy copy at 10–26, on file with the *Duke Law Journal*) (reviewing the results of IAT’s taken on the <http://projectimplicit.com> website between 2000 and 2006).

44. Gary Blasi, Jerry Kang, Linda Hamilton Krieger and others have described some of these studies. See Gary Blasi, *Critical Race Studies: Advocacy Against the Stereotype: Lessons from Cognitive Psychology*, 49 UCLA L. REV. 1241, 1246–54 (2002) (describing experiments demonstrating cognitive stereotyping); Kang, *supra* note 3, at 1510–11 (describing the use of MRI results to measure fear responses to Black and White faces); Krieger, *supra* note 4, at 1191–98, 1202–03, 1205–06, 1207–08, 1210–11 (describing various experiments showing bias); see also Jerry Kang & Mahzarin Banaji, *Fair Measures: A Behavioral-Realist Revision of “Affirmative Action,”* 94 CAL. L. REV. 1063, 1073–75 (2006) (documenting racial bias in hiring behavior and medical diagnoses); Kristin Lane et al., *Implicit Social Cognition and Law*, ANN. REV. L. & SOC. SCI., at 19.1, 19.3–19.13 (2007) (summarizing scholarship in implicit social cognition).

based phenomenon of “shooter bias.”⁴⁵ This bias emerges when participants play a video game that instructs them to shoot perpetrators (who are holding guns) as fast as they can but not to shoot innocent bystanders (who are unarmed but holding a non-gun object, such as a cell phone).⁴⁶ The “shooter bias” refers to participants’ propensity to shoot Black perpetrators more quickly and more frequently than White perpetrators and to decide not to shoot White bystanders more quickly and frequently than Black bystanders.⁴⁷ Studies have also shown that participants more quickly identify handguns as weapons after seeing a Black face, and more quickly identify other objects (such as tools) as nonweapons after seeing a White face.⁴⁸ In these studies, participants are entirely unaware that they have even seen a White or Black face.⁴⁹ The quick flashing image registers in the unconscious; participants are not consciously aware of the prime.⁵⁰ The unconscious visual stimulus is

45. See Correll et al., *supra* note 17, at 1325; Joshua Correll et al., *Event-Related Potentials and The Decision to Shoot: The Role of Threat Perception and Cognitive Control*, 42 J. EXPERIMENTAL SOC. PSYCHOL. 120, 122 (2006); B. Keith Payne, *Prejudice and Perception: The Role of Automatic and Controlled Processes in Misperceiving a Weapon*, 81 J. PERSONALITY & SOC. PSYCHOL. 181, 185–86 (2001). Several of the original studies on shooter bias were reviewed by Kang, *supra* note 3, at 1525–28.

46. Correll et al., *supra* note 45, at 122; Correll et al., *supra* note 17, at 1315. In the earlier Correll study, the other non-gun objects were an aluminum can, a camera, and a wallet. Correll et al., *supra* note 17, at 1315.

47. Correll et al., *supra* note 17, at 1325; Anthony G. Greenwald et al., *Targets of Discrimination: Effects of Race on Responses to Weapons Holders*, 39 J. EXPERIMENTAL PSYCHOL. 399, 403 (2003). Most discussions of shooter bias focus on race in explaining the Black-White result differences. Another possibility in these studies is reflected by the concept of “colorism.” See Trina Jones, *Shades of Brown: The Law of Skin Color*, 49 DUKE L.J. 1487, 1489 (1999). Jones notes that “[r]ace and skin color are distinct phenomena that sometime overlap.” *Id.* at 1493. Social cognition studies show that skin tone, like race, operates implicitly and triggers implicitly biased attitudes. See Nosek et al., *supra* note 43 (authors’ courtesy copy at 17).

48. Correll et al., *supra* note 45, at 120 (citing David M. Amodio et al., *Neural Signals for the Detection of Unintentional Race Bias*, 15 PSYCHOL. SCI. 88 (2004); Charles M. Judd et al., *Automatic Stereotypes vs. Automatic Prejudice: Sorting Out the Possibilities in the Payne (2001) Weapon Paradigm*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 75 (2004); Payne, *supra* note 45; B. Keith Payne et al., *Best Laid Plans: Effects of Goals on Accessibility Bias and Cognitive Control in Race-Based Misperceptions of Weapons*, 38 J. EXPERIMENTAL SOC. PSYCHOL. 384 (2002)).

49. See Correll et al., *supra* note 45, at 122.

50. *Id.* This visual flashing technique is known as “priming.” A well-known example of a priming study is Claude M. Steele & Joshua Aronson, *Stereotype Threat and the Intellectual Test Performance of African Americans*, 69 J. PERSONALITY & SOC. PSYCHOL. 797, 806–08 (1995), in which the authors found that priming racial identity affects standardized test scores. For a legal article on priming, see Justin D. Levinson, *Suppressing the Expression of Community Values in Juries: How “Legal Priming” Systematically Alters the Way People Think*, 73 U. CIN. L. REV.

enough to change the accuracy¹ and speed of identification of the gun or tool in a racially biased way.

Faced with the results of these studies and the concern that “officers use race when making the decision to shoot,”⁵¹ researchers have continued to investigate the roots of shooter bias. Studies have linked shooter bias to culturally held racial stereotypes, which link Blacks to danger.⁵² This well-known racial stereotype may even manifest in brain processes that moderate responses to fear. In a 2006 study, Joshua Correll and his colleagues looked at fluctuations in participants’ electrical brain activity (known as “event-related brain potentials”) while the participants played the shooter video game.⁵³ According to Correll and his colleagues, measuring event-related brain potentials can identify when people detect threats and when they have a desire to control a behavioral response.⁵⁴ Correll and his colleagues found that as participants played the video game, racial discrepancies manifested in the electrical activity of the brain.⁵⁵ That is, participants’ brain activity showed more threat-related brain activity for Black actors than White actors (even for Blacks without guns), and more control response activity for White actors compared to Black actors.⁵⁶ These brain responses then correlated with the participants’ performance—the more biased brain activity they displayed, the more shooter bias they exhibited.⁵⁷

A third type of social cognition study revealing implicit racial bias uses word-completion tasks to show how people think about stereotypical words more quickly when stereotypes have been activated. These studies demonstrate that people can more quickly complete word fragments, identify stereotypic words, and pronounce stereotypic words when stereotypes have been activated compared to

1059, 1065–70 (2005), which argues that placing citizens on juries alters their cultural and cognitive reference points and therefore changes their decisionmaking.

51. Correll et al., *supra* note 45, at 120.

52. Correll et al., *supra* note 17, at 1327; Correll et al., *supra* note 45, at 126.

53. Correll et al., *supra* note 45, at 121.

54. *Id.* These brain responses are known as P200 and N200 components, among others. *Id.*

55. *Id.* at 124–25.

56. *Id.*

57. *Id.* at 125. Biased results in brain activity and shooter bias also correlated with individual participants’ personal and cultural stereotypes. *Id.*

when they have not been activated.⁵⁸ For example, a study by Daniel Gilbert and J. Gregory Hixon presented participants with lists of partially completed words and asked them to complete as many as possible during a short time period.⁵⁹ Some of the words presented were stereotypically associated with Asians, such as the word “POLITE” (written as POLI_E, so that other words, such as “police,” could be formed during the word completion task).⁶⁰ As participants completed the task, the experimenters exposed them either to a Caucasian or Asian research assistant, whose only role was to hold up cards containing the word fragments.⁶¹ The participation of this assistant was hypothesized to be significant enough to activate racial stereotypes and thus affect word completions.⁶² The hypothesis was correct. Participants who were presented the word fragments by an Asian assistant completed more words in a stereotype-consistent manner than those who were presented word fragments by a Caucasian assistant.⁶³ This study and others like it indicate that implicit stereotypes manifest quickly and potentially harmfully in a variety of different ways, and that they seemingly do so automatically any time there is a stereotype-consistent cognitive opportunity.

Projects using broader social science methodologies have revealed similar racial gaps, supporting the social cognition research. Marianne Bertrand and Sendhil Mullainathan created fictitious character names and resumes and studied how real-world potential employers responded to “African-American-sounding names” compared to “White-sounding names.”⁶⁴ Using the fictitious resumes,

58. Ziva Kunda & Steven J. Spencer, *When Do Stereotypes Come to Mind and When Do They Color Judgment? A Goal-Based Theoretical Framework for Stereotype Activation and Application*, 129 PSYCHOL. BULL. 522, 522–23 (2003).

59. Daniel T. Gilbert & J. Gregory Hixon, *The Trouble of Thinking: Activation and Application of Stereotypic Beliefs*, 60 J. PERSONALITY & SOC. PSYCHOL. 509, 510 (1991).

60. *Id.* Other words included “SHORT,” “SHY,” “RICE,” and “NIP.” *Id.* These words were obtained by asking twenty college students to name their stereotypes of Asians. *Id.*

61. *Id.*

62. *Id.* at 511.

63. *Id.* The experimenters also tested how cognitive busyness affected stereotype-consistent word completion. *Id.* at 510. The results reported in the text are for the non-busy participants. *See id.* at 511. When participants were distracted while performing their tasks, stereotypes were moderated in word completions. *Id.* When stereotypes were activated followed by an increase in participants’ activity, however, participants were even more likely to apply stereotypes. *Id.* at 513.

64. Marianne Bertrand & Sendhil Mullainathan, *Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination*, 94 AM. ECON. REV. 991, 992 (2004).

which also varied the experience of the imaginary applicant, the experimenters responded to real help wanted ads in Boston and Chicago.⁶⁵ The results demonstrated that employers were more likely to call job applicants with White sounding names than African-American sounding names.⁶⁶ In fact, when accounting for the dual influence of racial name sound and prior job experience, the researchers found that a White name yielded as many callbacks as an additional eight years of experience.⁶⁷

Research in social cognition and related areas thus provides strong evidence that implicit racial attitudes and stereotypes are triggered by automatic cognitive processes in a variety of cognitive domains. Based upon this compelling evidence, it would not at all be surprising if implicit racial biases similarly infect yet another cognitive domain—that of memory. In Part III, I examine research on the human memory. Such research illustrates a close connection between memory errors and racial stereotypes. In the memory domain, as well as in implicit social cognition more generally, the manifestations of implicit racial bias often conflict with a person's explicit attitudes about race. This conflict is illustrated by the gap between implicit attitudes and explicit preferences.

2. *Explicit Racial Preference, Implicit Bias, and Social Dominance.* One particularly interesting characteristic of implicit racial attitudes is that they frequently diverge from explicit racial attitudes. That is, people who display strong implicit biases are often not the same people who demonstrate strong explicit biases.⁶⁸ According to Patricia Devine, "Even those who consciously renounce prejudice have been shown to have implicit or automatic biases that conflict with their nonprejudiced values."⁶⁹ For example, Correll and his colleagues evaluated "shooter" video game participants on game performance (an implicit measure) and also asked them about their racial preferences (an explicit measure).⁷⁰ Results showed that explicit measures of racial preferences did not correlate with results for the

65. *Id.* at 991.

66. *Id.* at 997–98.

67. *Id.* at 998.

68. See Patricia G. Devine, *Implicit Prejudice and Stereotyping: How Automatic Are They?* Introduction to the Special Section, 81 J. PERSONALITY & SOC. PSYCHOL. 757, 757 (2001). Social cognition researchers call this divergence "dissociation." See Kang, *supra* note 3, at 1513.

69. Devine, *supra* note 68, at 757.

70. Correll et al., *supra* note 17, at 1322.

video game.⁷¹ That is, people who exhibited greater amounts of shooter bias were not necessarily the same ones who endorsed more racially unequal preferences.⁷² A related and somewhat surprising finding was that members of bias-affected groups sometimes harbored implicit biases against their own group. For example, Banaji and Greenwald found that women and men both display implicit gender stereotypes that are sometimes negative toward women.⁷³ Similarly, Brian Nosek and his colleagues reported that older people (those over sixty) and younger people (those in their twenties) show a similar implicit preference for young over old.⁷⁴

One measure of explicit racial attitudes is the Social Dominance Orientation (SDO) scale. SDO is a measure that is designed to show an individual's preference for social hierarchy.⁷⁵ According to Felicia Pratto, Jim Sidanius, and their colleagues, a social dominance orientation is "the extent to which one desires that one's in-group dominate and be superior to out-groups."⁷⁶ The scale they developed to test SDO has been accepted as a measure of explicit racial preferences and has been used by social psychologists to predict anti-Black racism as well as other explicit racial preferences.⁷⁷ In the empirical study I conducted on memory bias and race, presented in Part III, I employed the SDO scale. I conducted this test in order to determine whether implicit memory biases, if they do in fact exist, are

71. *Id.*

72. *Id.* Not all studies show no relationship between implicit and explicit attitudes. Some studies reveal at least a weak correlation between the two. *E.g.*, Fazio & Olson, *supra* note 3, at 304 (observing that there is "no simple answer" to the issue of whether and how implicit and explicit attitudes are related, but nonetheless suggesting that both are predictive of behavior in different ways); Wilhelm Hofmann et al., *A Meta-Analysis on the Correlation Between the Implicit Association Test and Explicit Self-Report Measures*, 31 PERSONALITY & SOC. PSYCHOL. BULL. 1369, 1382 (2005) (finding a relationship between implicit and explicit attitudes).

73. Mahzarin R. Banaji & Anthony Greenwald, *Implicit Gender Stereotyping in Judgments of Fame*, 68 J. PERSONALITY & SOC. PSYCHOL. 181, 194 (1995).

74. Nosek et al., *supra* note 43 (authors' courtesy copy at 10).

75. Felicia Pratto et al., *Social Dominance Orientation: A Personality Variable Predicting Social and Political Attitudes*, 67 J. PERSONALITY & SOC. PSYCHOL. 741, 742 (1994). See generally JIM SIDANIUS & FELICIA PRATTO, *SOCIAL DOMINANCE: AN INTERGROUP THEORY OF SOCIAL HIERARCHY AND OPPRESSION* (1999) (discussing social dominance theory).

76. Pratto et al., *supra* note 75, at 742.

77. To confirm validity, Pratto and her colleagues simultaneously tested their SDO measure along with several explicit racism measures. *Id.* at 745. Results indicated that the SDO measured racism well. *Id.* at 747. For each of these measures, there were significant correlations, indicating that the SDO agrees with these other scales. *Id.* For the fourteen-item SDO dependent variables, see *infra* note 248 and accompanying text.

related to explicit racial attitudes.⁷⁸ If the two are related, such that jurors who exhibit implicit racial bias also exhibit explicit racial preferences, potential legal solutions might include employing explicit racial preference questionnaires for jurors. Such screenings would thus block both explicitly biased and implicitly biased jurors from participating in decisionmaking. If implicit memory bias and explicit racial attitudes are not related, however, then dealing with such biases becomes significantly harder.

3. *Cultural Responsibility for Implicit Racial Attitudes and Stereotypes.* Who or what is responsible for implicit racial biases? Surprisingly few of the legal projects on implicit racial bias have examined the causes of the biases or discuss the probable link between historical and cultural discrimination and implicit racial biases.⁷⁹ Psychologists, however, often discuss the causes of implicit biases and stereotypes. According to Laurie Rudman, Jon Jost, and others, a variety of factors, including one's desire to maintain social order, cause implicit biases.⁸⁰ System Justification Theory, for example, posits that people sometimes act automatically to maintain a structure of social order.⁸¹ This implicit need for social order, which often conflicts with a person's explicit preferences, could be one direct link between a culture of racial subordination and implicit racial bias.

In a study investigating how the desire to maintain social order may influence implicit attitudes, Professor Rudman and her colleagues tested the link between group status and implicit (versus

78. See *infra* note 248 and accompanying text.

79. See Gregory Mitchell & Philip Tetlock, *Antidiscrimination Law and the Perils of Mindreading*, 67 OHIO ST. L.J. 1023, 1028, 1032–33 (2006) (arguing that some legal scholars tend to propose legal solutions to the IAT without investigating alternative causes for the IAT's results, such as knowledge of racial inequalities in society).

80. John T. Jost et al., *A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo*, 6 POL. PSYCHOL. 881, 912 (2004) (connecting “implicit, nonconscious levels of awareness” with “an ideological motive to justify the existing social order”); Rudman, *supra* note 31, at 135–37 (identifying past experiences, emotional reconditioning, cultural biases, and cognitive balance as other potential causal links).

81. See Jost et al., *supra* note 80, at 912. System Justification Theory evidence shows, for example, that many members of minority groups harbor negative stereotypes about their own groups. *Id.* at 884. For a discussion of System Justification Theory in law and social justice, see Gary Blasi & John T. Jost, *System Justification Theory and Research: Implications for Legal Advocacy and Social Justice*, 94 CAL. L. REV. 1119, 1144–62 (2006).

explicit) group favoritism.⁸² They found that members of less-favored minority groups (such as overweight people and poor people) implicitly preferred more favored minority groups (such as Asians and Jews) to their own groups, but that these preferences only operated implicitly.⁸³ The results indicated that the lower the cultural status of the group, the more likely that members of that group would demonstrate “automatic ingroup devaluation.”⁸⁴ This research suggests that although people may act or speak out (explicitly) to reject social ordering of preferred groups, they may possess implicit motivation to maintain social and cultural hierarchies, even when it means disfavoring their own group. In the legal setting, System Justification Theory could explain how an implicit memory bias might act to similarly subordinate members of disfavored groups.⁸⁵

The connection between implicit biases and maintaining social order (at the expense of low cultural status groups) is not surprising. After all, it is quite intuitive that implicit biases reflect societal stereotypes. Research on stereotype formation and maintenance confirms that stereotypes are instilled at an early age and come from cultural and societal beliefs.⁸⁶ According to Antony Page, psychologists have found that stereotypes arise when a person is as young as three years old and are usually learned from parents, peers, and the media.⁸⁷ As people grow older, their stereotypes become implicit and remain mostly unchanged even as they develop nonprejudiced explicit views.⁸⁸ Howard Ehrlich states, “Stereotypes about ethnic groups appear as a part of the social heritage of society. . . . [And] [n]o person can grow up in a society without having learned the stereotypes assigned to the major ethnic groups.”⁸⁹

82. Laurie A. Rudman et al., *Minority Members' Implicit Attitudes: Automatic Ingroup Bias as a Function of Group Status*, 20 SOC. COGNITION 294, 294 (2002).

83. *Id.* at 312.

84. *Id.*

85. See Blasi & Jost, *supra* note 81, at 1119.

86. See Page, *supra* note 22, at 193–98, 203–04. Stereotypes are a key ingredient in recall errors and in false memory generation. See *infra* Part II.B.

87. Page, *supra* note 22, at 203–04; Frances E. Aboud & Maria Amato, *Developmental and Socialization Influences on Intergroup Bias*, in BLACKWELL HANDBOOK OF SOCIAL PSYCHOLOGY: INTERGROUP PROCESSES 65, 73–76 (Rupert Brown & Samuel L. Gaertner eds., 2001).

88. Timothy D. Wilson et al., *A Model of Dual Attitudes*, 107 PSYCHOL. REV. 101, 103–04 (2000).

89. Page, *supra* note 22, at 203 (citing HOWARD J. EHRLICH, THE SOCIAL PSYCHOLOGY OF PREJUDICE 35 (1973)).

B. Connecting Implicit Biases and Legal Theory

Most legal discussions of implicit bias focus on the disharmony between legal tests for discrimination (which require explicit, intentional racism)⁹⁰ and the psychological reality of discrimination (which is often implicit and does not meet traditional definitions of intent).⁹¹ These projects meaningfully incorporate empirical research on implicit racial bias into substantive legal models and suggest that legal standards must evolve toward understanding the true workings of racial bias. This lesson is powerful. But there are other lessons to be learned from the new research on implicit bias. Most projects have focused on the role of unconscious or implicit bias in the discriminatory act or mental state of the perpetrator of discrimination. They have not focused on the decisionmaking implications of this new research. Specifically, few projects have investigated how racial biases affect the implicit cognitive processes of judges and juries.⁹² Nonetheless, the concepts of unconscious racism and implicit racial bias are well established in legal scholarship.

In what is credited as the most influential legal article on unconscious racism, Charles Lawrence challenged equal protection discourse with a psychological theory of unconscious discrimination.⁹³ “[W]e are all racists,” he proclaimed, and noted that “most of us are unaware of our racism.”⁹⁴ Drawing upon research in both Freudian analysis and cognitive psychology, Lawrence questioned how the

90. See Krieger, *supra* note 4, at 1161 (describing Title VII’s intent requirement and questioning “the premise that discrimination necessarily manifests intent or motive”); Lawrence, *supra* note 3, at 323 (“[R]equiring proof of conscious or intentional motivation as a prerequisite to constitutional recognition that a decision is race-dependent ignores much of what we understand about how the human mind works. . . . [E]qual protection doctrine must find a way to come to grips with unconscious racism.”).

91. See Krieger, *supra* note 4, at 1211 (critiquing the continuing tension between disparate treatment and new knowledge on unconscious racism); see also Kang & Banaji, *supra* note 44, at 1064–65 (discussing the concept of “behavioral realism,” and the need to compare legal doctrine to psychological reality). For a similar call in a different legal context, see Justin D. Levinson, *Mentally Misguided: How State of Mind Inquiries Ignore Psychological Reality and Overlook Cultural Differences*, 49 HOW. L.J. 1, 1 (2005) (“[P]olicymakers develop law related to the human mind without an understanding of the human mind itself.”).

92. Scholarship in the area of race and juries for the most part focuses either on the ultimate decision of the jury or on areas like eyewitness identification. These projects often overlook the powerful workings of unconscious bias in the various stages of legal decisionmaking. For a discussion of some of the existing work on race and eyewitness identification, see *infra* note 190 and accompanying text.

93. Lawrence, *supra* note 3, at 319–27.

94. *Id.* at 322.

*Washington v. Davis*⁹⁵ discriminatory purpose doctrine⁹⁶ reflected an American culture that consistently propagates discrimination, most of which is unconscious.⁹⁷ The intent doctrine, Lawrence argued, not only misses the mark because of the scientific reality of unconscious racism, but in doing so fails to carry out the historical call for justice central to the Equal Protection Clause.⁹⁸ Since Lawrence first published this argument, a heavily empirical field of psychology—highlighted by implicit social cognition findings—developed to support his contentions. Even the field of cultural psychology, which had been a mere embryo when Lawrence wrote in 1987 and which blossomed in the 1990's, was born from an idea similar to Lawrence's discussion of culture—that cultural knowledge, norms, and experiences constantly shape the way societal members think, feel, and perceive reality.⁹⁹ This nascent scientific field has begun to help deconstruct cognitive biases (by illustrating their cultural limitations),¹⁰⁰ and it lends support to Lawrence's theory that the cultural foundations of unconscious racial discrimination must be investigated and understood.

95. *Washington v. Davis*, 426 U.S. 229 (1976).

96. *Id.* at 239.

97. See generally Lawrence, *supra* note 3.

98. See *id.* at 325–26.

99. See Joan G. Miller, *Culture and the Development of Everyday Social Explanation*, 46 J. PERSONALITY & SOC. PSYCHOL. 961, 961 (1984); Richard A. Shweder, *Cultural Psychology - What Is It*, in CULTURAL PSYCHOLOGY 1, 1 (James W. Stigler et al. eds., 1990); see also RICHARD E. NISBETT, THE GEOGRAPHY OF THOUGHT: HOW ASIANS AND WESTERNERS THINK DIFFERENTLY . . . AND WHY 29 (2003) (discussing the different habits of thought between the East and the West); ERIC K. YAMAMOTO, INTERRACIAL JUSTICE: CONFLICT & RECONCILIATION IN POST-CIVIL RIGHTS AMERICA 86–97 (1999) (discussing the role of cultural norms in stereotype formation); Li-Jun Ji et al, *Culture, Change, and Prediction*, 12 PSYCHOL. SCI. 450, 450 (2001) (discussing how Chinese and Americans perceive change differently); Michael W. Morris & Kaiping Peng, *Culture and Cause: American and Chinese Attributions for Social and Physical Events*, 67 J. PERSONALITY & SOC. PSYCHOL. 949, 949 (1994) (discussing dispositionalism in attribution for behavior in individualist versus collectivist cultures). For legal articles discussing the intersection of cultural psychology and law, see Justin D. Levinson & Kaiping Peng, *Different Torts for Different Cohorts: A Cultural Psychological Critique of Tort Law's Actual Cause and Foreseeability Inquiries*, 13 S. CAL. INTERDISC. L.J. 195, 195 (2004) [hereinafter Levinson & Peng, *Different Torts for Different Cohorts*], which highlights cultural differences in cognitive biases, causation attributions, and foreseeability predictions in the United States and China Justin D. Levinson & Kaiping Peng, *Valuing Cultural Differences in Behavioral Economics*, 4 ICFAI J. BEHAV. FIN. 32, 45 (2007) [hereinafter Levinson & Peng, *Valuing Cultural Differences*] (on file with the *Duke Law Journal*), which argues for a cultural model of behavioral economics; and Levinson, *supra* note 91.

100. See Levinson & Peng, *Different Torts for Different Cohorts*, *supra* note 99, *passim*; Levinson & Peng, *Valuing Cultural Differences*, *supra* note 99, at 34.

Outside of equal protection discourse, a major area of focus on unconscious racism and implicit racial bias has been in the employment discrimination arena. Scholars have debated not only whether implicit racial bias actually affects employment decisions, but also how employment law doctrine should change (or not change) to incorporate a better understanding of how racism truly works. In an early major project in this area, Linda Hamilton Krieger discussed subtle forms of racism in Title VII employment discrimination cases, arguing that disparate treatment jurisprudence incorrectly assumes motivational, rather than cognitive, bases for discrimination.¹⁰¹ Although employment discrimination law's assumptions about the nature of discrimination may have been accepted historically by scientists, she claimed, "these assumptions have been so undermined, both empirically and theoretically, that they can no longer be considered valid."¹⁰² To illustrate the gap between the law's focus on conscious motivation and empirical evidence revealing unconscious racism, Krieger reviewed social cognition studies beginning in the 1960s, starting with research demonstrating the automatic nature of in-group and out-group categorization. For example, Krieger described a 1973 study by Billig and Tajfel that indicated that people chose to allocate monetary rewards to in-group members rather than out-group members, even when greater fairness and mutual gain would have been achieved using other allocations.¹⁰³ Bridging empirical findings and antidiscrimination policy, Krieger suggested reformulating disparate treatment doctrine to allow proof that group status played a role in causing an employment decision. This change would alter courts' focus from an intent standard (whether an employer intended that race make a difference in an employment decision) to a causation standard (whether race or group status 'made a difference' in the decision).¹⁰⁴

101. Krieger, *supra* note 4, at 1186–1211; *see also* Deana A. Pollard, *Unconscious Bias and Self-Critical Analysis: The Case for a Qualified Evidentiary Equal Employment Opportunity Privilege*, 74 WASH. L. REV. 913, 913 (1999) (arguing for a qualified evidentiary privilege to encourage unconscious-bias testing); Amy L. Wax, *Discrimination as Accident*, 74 IND. L.J. 1129, 1131 (1999) (discussing "unconscious disparate treatment"); Jessie Allen, Note, *A Possible Remedy for Unthinking Discrimination*, 61 BROOK. L. REV. 1299 (1995) (sounding another early call for incorporating unconscious discrimination into intentional discrimination standards).

102. Krieger, *supra* note 4, at 1165.

103. *Id.* at 1192–93 (citing Michael Billig & Henri Tajfel, *Social Categorization and Similarity in Intergroup Behaviour*, 3 EUR. J. SOC. PSYCHOL. 27, 37–48 (1973)).

104. *Id.* at 1242.

Since Krieger's groundbreaking work, employment law scholarship has blossomed with discussions of unconscious racism and implicit racial bias.¹⁰⁵ Ann McGinley claims that a historical interpretation of Title VII's proof constructs indicates that courts should allow evidence of unequal treatment caused by unconscious discrimination, but notes that courts have been instead unjustifiably tightening their analysis in ways that exclude such evidence.¹⁰⁶ Lu-in Wang carries forward Krieger's focus on unconscious racism, arguing that institutions are partly to blame for perpetuating a status quo fraught with racial bias.¹⁰⁷ Tristin Green argues that corporate culture itself propagates racism in an unconscious way.¹⁰⁸ Melissa Hart focuses on how existing Title VII remedies may actually provide redress for unconscious racism manifested in employment decisions.¹⁰⁹ Angela Onwuachi-Willig and Mario Barnes critique Title VII in light of the Bertrand and Mullainathan study,¹¹⁰ arguing that constructed social meanings of race (such as someone being "regarded as" Black), rather than race itself, should be used in legal applications of antidiscrimination laws.¹¹¹ Samuel Bagenstos describes the compelling nature of unconscious racism literature and uses it to evaluate a

105. See, e.g., Audrey J. Lee, *Unconscious Bias Theory in Employment Discrimination Litigation*, 40 HARV. C.R.-C.L. L. REV. 481, 482 (2005).

106. Ann C. McGinley, *¡Viva La Evolución!: Recognizing Unconscious Motive in Title VII*, 9 CORNELL J.L. & PUB. POL'Y 415, 419 (2000).

107. Lu-in Wang, *Race as Proxy: Situational Racism and Self-Fulfilling Stereotypes*, 53 DEPAUL L. REV. 1013, 1017-20 (2004).

108. See Tristin K. Green, *Work Culture and Discrimination*, 93 CAL. L. REV. 623, 628 (2005) (describing "work culture as a source of discrimination").

109. Melissa Hart, *Subjective Decisionmaking and Unconscious Discrimination*, 56 ALA. L. REV. 741, 749-50 (2005).

110. Bertrand & Mullainathan, *supra* note 64. For an article that predates and contextualizes Professors Bertrand and Mullainathan's work as well as others' research in the field, see Mari J. Matsuda, *Voices of America: Accent, Antidiscrimination Law, and a Jurisprudence for the Last Reconstruction*, 100 YALE L.J. 1329, 1329 (1991). Professor Matsuda addresses the role of prejudice relating to the way racial minorities speak and casts the importance of voice and accent in (and beyond) a Title VII framework. *Id.* ("Someone who tells you they don't like the way you speak is quite likely telling you that they don't like you."). While Bertrand and Mullainathan did not test the role of voice and accent in hiring decisions, such a study would be worth conducting. For a 2006 article on the changing form of discrimination, see Kimberly A. Yuracko, *Trait Discrimination as Race Discrimination: An Argument About Assimilation*, 74 GEO. WASH. L. REV. 365, 365 (2006).

111. Angela Onwuachi-Willig & Mario L. Barnes, *By Any Other Name?: On Being "Regarded as" Black, and Why Title VII Should Apply Even if Lakisha and Jamal Are White*, 2005 WIS. L. REV. 1283 (noting that employers often use other criteria as "proxies for race, national origin, sex, religion, or age to exclude an applicant as a job contender").

“structural approach” to antidiscrimination law, which he claims highlights both the hope and also the challenges of antidiscrimination laws.¹¹²

Legal scholarship on unconscious racism and implicit bias has not been limited to equal protection and employment discrimination discussions. In other areas of law, the prevalence of scholarship discussing unconscious racism and implicit racial bias has increased greatly.¹¹³ Critiquing the Federal Communications Commission’s call for more local news, Jerry Kang relies on social cognition research in claiming that local news broadcasts can act as a “Trojan Horse,” a covert delivery mechanism that propagates the implicit tools of racism.¹¹⁴ Kang systematically describes social cognition studies that indicate that the simple presence of racial cues can trigger implicit racial bias. For example, Kang reviews research on the IAT, details studies on shooter bias, and discusses a variety of other studies.¹¹⁵ He then demonstrates how these accounts of implicit racial bias are not harmless attitudes with little or no connection to real-world effects. Instead, they can be directly linked to racially biased behavior, interactions, and outcomes.¹¹⁶ Furthermore, echoing Krieger’s prior message, Kang’s account provides compelling evidence that people frequently have no conscious awareness of their own implicit biases.¹¹⁷

112. Samuel R. Bagenstos, *The Structural Turn and the Limits of Antidiscrimination Law*, 94 CAL. L. REV. 1, 2–4 (2006).

113. See, e.g., Reshma M. Saujani, “The Implicit Association Test”: A Measure of Unconscious Racism in Legislative Decision-Making, 8 MICH. J. RACE & L. 395, 413–15 (2003); Andrew Elliot Carpenter, Note, *Chambers v. Mississippi: The Hearsay Rule and Racial Evaluations of Credibility*, 8 WASH. & LEE RACE & ETHNIC ANCESTRY L.J. 15, 15 (2002) (arguing that unconscious racial bias affects judicial determinations of witness credibility).

114. Kang, *supra* note 3, at 1553–54.

115. *Id.* at 1535. See Kristin A. Lane et al., *Understanding and Using the Implicit Association Test: IV*, in IMPLICIT MEASURES OF ATTITUDES 59 (Bernd Wittenbrink & Norbert Schwarz eds., 2007) (citing T. Andrew Poehlman et al., *Understanding and Using the Implicit Association Test: III. Meta-analysis of Predictive Validity* (Sept. 16, 2005) (unpublished manuscript at 33), available at <http://faculty.washington.edu/agg/pdf/IAT.Meta-analysis.16Sep05.pdf> (finding significant evidence that the IAT connects to real-world effects, such as “judgments, behaviors, choices, and physiological reactions”)); *id.* at 78 (discussing whether the IAT connects to real-world behaviors); see also Fazio & Olson, *supra* note 3, at 297 (discussing various priming measures and clarifying “several unresolved theoretical and empirical issues concerning implicit measures”); Kang & Banaji, *supra* note 44 (documenting racial bias in hiring behavior and medical diagnoses).

116. See Kang, *supra* note 3, at 1515–17; see also Bertrand & Mullainathan, *supra* note 64, at 991 (linking implicit racial bias to problematic employment decisions).

117. Kang, *supra* note 3, at 1508.

In 2006, Kang joined with Mahzarin Banaji to argue for a new model of affirmative action that incorporates knowledge from implicit social cognition.¹¹⁸ Advancing a new methodology called “behavioral realism,”¹¹⁹ Kang and Banaji address the unpersuasive nature of traditional debates over affirmative action, pointing out that implicit social cognition research opens new avenues for affirmative action discourse.¹²⁰ Demonstrating the many ways that implicit racial bias functions automatically and contrary to explicit preferences, they propose a system of “fair measures” that harnesses science as part of policy development. Taking “fair measures” in response to societal implicit biases requires counteracting or avoiding (if and when possible) the harmful effects of implicit bias. For example, Kang and Banaji argue that “cloaking” social category¹²¹ or removing stereotype threat triggers¹²² can help avoid known areas of harm connected to bias.¹²³ Kang and Banaji also use evidence of successful bias-reduction strategies to call for a new type of fair measure—using “debiasing agents.”¹²⁴ This fair measure harnesses bias reduction studies indicating that exposure to minorities in counterstereotypic roles (such as authority figures) can temporarily reduce (or at least suppress) implicit bias. In practical terms, using a “debiasing agent” might include publicizing or hiring counterstereotypic exemplars—such as “women construction workers, male nurses, Black intellectuals, and White janitors.”¹²⁵ If people recognize and associate

118. Kang & Banaji, *supra* note 44, at 1065–67.

119. *Id.* at 1065 (seeking to expose and then remedy gaps between legal assumptions and scientific reality); *see also* Levinson, *supra* note 91, at 1–3 (empirically evaluating the gap between legal standards of “intent” and the psychological reality of the way people perceive intentionality). Work by Professors Lawrence, Krieger, and others focusing on unconscious motives fits nicely within this “behavioral realist model.”

120. Kang & Banaji, *supra* note 44, at 1068–71.

121. *Id.* at 1093 (“For example, schools can conduct blind grading of student work.”). The authors point out that such a step could help ameliorate effects such as those demonstrated by Bertrand and Mullainathan’s job resume study. *Id.*

122. *Id.* at 1096. Stereotype threat describes the harmful effects that can be generated simply by “priming” racial or other stereotype-consistent constructs. *See, e.g.,* Steele & Aronson, *supra* note 50, at 797 (having African-American students identify their race before taking a standardized test has been shown to lower their standardized test scores). Avoiding racial primes in such situations may not fully counteract the effect of stereotypes on test performance, but it could reduce it. *See* Kang & Banaji, *supra* note 44, at 1096–98.

123. Kang & Banaji, *supra* note 44, at 1092–94, 1096–98.

124. *Id.* at 1066–67 (proposing new terminology by using a “fair measures” model instead of an “affirmative action” model).

125. *Id.* at 1109.

these debiasing agents as “anchored to that social category,” related biases and stereotypes may become moderated over time.¹²⁶

Another example of the growing scholarship on implicit racial bias is Antony Page’s critique of the *Batson v. Kentucky*¹²⁷ three-step procedure for attacking peremptory challenges.¹²⁸ Presenting a broad array of evidence detailing the automaticity of racial and gender stereotyping, Page challenges the *Batson* test in light of social science research.¹²⁹ Supporting Krieger and Kang’s work that points out the disconnect between conscious awareness and implicit bias, Page argues that because attorneys are not aware of their own thought processes, they may not know fully why they exercised a peremptory challenge.¹³⁰

Focusing on practical solutions to the unconscious racism problem, Jody Armour discusses unconscious racism by distinguishing between stereotypes and personal beliefs, and proposes using egalitarian (conscious) personal beliefs to help overcome the effects of unconscious racism on juries.¹³¹ Armour argues that the best bias-combating strategies are not ex post constitutional law inquiries (as called for by the intent doctrine), but a practical and scientifically grounded bias-reduction strategy targeting legal decisionmakers.¹³² Despite Armour’s early call for bias reduction and for future research on overcoming bias, social cognition research has not yet provided a

126. *Id.*

127. *Batson v. Kentucky*, 476 U.S. 79 (1986).

128. Page describes the *Batson* standard:

In step one, the defendant must raise an inference that the prosecutor used a peremptory challenge to exclude the person from the jury on account of her race. In step two, the trial court judge, in order to determine whether the peremptory challenge was exercised unconstitutionally, asks the prosecutor to supply a race-neutral reason. If the prosecutor meets this burden, in step three the judge decides whether the prosecutor exercised the peremptory challenge with the requisite purposeful discrimination.

Page, *supra* note 22, at 158 (citing *Batson*, 476 U.S. at 93–98).

129. *Id.* at 220–21 (highlighting the faultiness of human memories when information is inconsistent with stereotypes and pointing out that people can also have “‘memory illusions,’ in which [people] recall stereotype-confirming behaviors that never actually transpired”) (citing Tadesse Araya et al., *Remembering Things That Never Occurred: The Effects of To-Be-Forgotten Stereotypical Information*, 50 EXPERIMENTAL PSYCHOL. 27, 27 (2003)).

130. *Id.* at 160.

131. Jody Armour, *Stereotypes and Prejudice: Helping Legal Decisionmakers Break the Prejudice Habit*, 83 CAL. L. REV. 733, 733–34 (1995); see also Kang, *supra* note 3, at 1508 n.81 (noting that Armour’s distinction is roughly analogous to the difference between implicit and explicit).

132. See Armour, *supra* note 131, at 733–34.

universal bias reduction solution. In fact, overcoming implicit biases such as those demonstrated by the IAT appears to be quite difficult, given that implicit biases are particularly resistant to conscious efforts.¹³³

Scholars have also incorporated knowledge of implicit racial bias into political lawyering¹³⁴ and social justice strategies. Calling for practical applications of research on implicit bias, Gary Blasi argues that scientific research on the human mind and racial bias should be understood and applied by practicing attorneys and public policy advocates.¹³⁵ As Blasi points out, understanding the true implicit nature of bias can reshape the nature of effective advocacy. Eric Yamamoto also recognizes the importance of understanding unconscious racial forces in a public policy advocacy setting.¹³⁶ Examining the gap between legal efforts for social justice and scholarly pursuits in critical race theory, Yamamoto argues that political lawyering must become compatible with emerging perspectives on racism and bias, including the complex role of unconscious racism in society.¹³⁷

Perhaps reflecting successes of the sort advocated by Blasi and Yamamoto, judicial decisions have begun to recognize the influence of unconscious racial bias.¹³⁸ For example, in the case of *Chin v.*

133. See Kang, *supra* note 3, at 1562 (noting that although conscious control may not counteract implicit attitudes demonstrated by the IAT, consciously altering “informational and interaction environment” might help). See *infra* Part IV for a more detailed discussion of bias-reduction strategies. Through the years, scholars have kept Armour’s focus on overcoming bias alive. In one such project, Christine Jolls and Cass Sunstein suggest that perhaps legal rules themselves can offer clues to dealing with biases in the legal setting. See Christine Jolls & Cass Sunstein, *The Law of Implicit Bias*, 94 CAL. L. REV. 969 (2006).

134. Eric K. Yamamoto, *Critical Race Praxis: Race Theory and Political Lawyering Practice in Post-Civil Rights America*, 95 MICH. L. REV. 821, 833–34 (1997) (describing political lawyers in post-civil rights America as those who have employed law and civil rights “in efforts to change government and private institutions”).

135. Blasi, *supra* note 44, at 1245.

136. See Yamamoto, *supra* note 134, at 845 n.17, 847–48 (recognizing the continued power of Lawrence’s arguments and drawing on the cultural links to discrimination).

137. *Id.* at 827, 830, 868.

138. *E.g.*, *Chin v. Runnels*, 343 F. Supp. 2d 891 (N.D. Cal. 2004). For a discussion of two projects involving this case, see Sara R. Benson, *Reviving the Disparate Impact Doctrine to Combat Unconscious Discrimination: A Study of Chin v. Runnels*, 31 T. MARSHALL L. REV. 43, 61 (2005), opining that evidence of severe disparate impact plus unconscious bias should be enough for a plaintiff’s victory; and Teshima, *supra* note 22, at 123, arguing that “court officials [in *Chin*] . . . unconsciously relied upon the stereotype of Asian Americans as unassertive and passive.” A more famous mention of unconscious discrimination occurred in Justice O’Connor’s dissent in *Georgia v. McCollum*. *Georgia v. McCollum*, 505 U.S. 42, 68 (1992) (O’Connor, J.,

Runnels,¹³⁹ a criminal defendant convicted of murder appealed the guilty verdict on habeas corpus grounds, arguing that Chinese Americans, Filipino Americans, and Hispanic Americans had been excluded from serving as foreperson on the grand jury that indicted him.¹⁴⁰ Though the court denied the appeal in light of the “narrow standard of review applicable,”¹⁴¹ Judge Breyer nonetheless discussed the evidence regarding foreperson selection, which led to “a strong inference that the selection process may not have been race-neutral.”¹⁴² In the San Francisco jurisdiction in which the defendant was tried, no Chinese American, Filipino American, or Latino had been chosen to be grand jury foreperson during a thirty-six year period, a result that would have amounted to a .0003 percent chance if evaluated based on the chances of random selection.¹⁴³ Breyer wrote, “[T]he complete absence of grand jury forepersons of Chinese, Filipino, or Latino descent over a 36-year period begs the question whether unconscious stereotyping or biases may have contributed to the exclusion of these groups notwithstanding the best of intentions of those involved.”¹⁴⁴ Other prominent juridical references to unconscious racism have included references at the U.S. Courts of Appeals¹⁴⁵ and the Supreme Court.¹⁴⁶

As legal scholarship on implicit bias has grown, empirical studies have consistently improved their methodology and continued to reveal that Americans possess a variety of racially biased implicit attitudes and stereotypes.¹⁴⁷ Nonetheless, few projects have investigated how racial biases affect the implicit cognitive processes of

dissenting) (“It is by now clear that conscious and unconscious racism can affect the way white jurors perceive minority defendants and the facts presented at their trials, perhaps determining the verdict of guilt or innocence.”).

139. *Chin v. Runnels*, 343 F. Supp. 2d 891 (N.D. Cal. 2004).

140. *Id.* at 892.

141. *Id.* at 905.

142. *Id.*

143. *Id.*

144. *Id.* at 906.

145. *See id.* (citing *EEOC v. Inland Marine*, 729 F.2d 1229 (9th Cir. 1984); *Gonzalez-Rivera v. INS*, 22 F.3d 1441 (9th Cir. 1994); *United States v. Bishop*, 959 F.2d 820 (9th Cir. 1992); *Bush v. Commonwealth Edison Co.*, 990 F.2d 928 (7th Cir. 1993)).

146. *See id.* (citing *Georgia v. McCollum*, 505 U.S. 42 (1992) (O'Connor, J., dissenting)).

147. *See, e.g.,* Nosek et al., *supra* note 41, at 101 (administering IATs using a Web-based interface). The evolution and debate over the IAT's validity exemplifies the methodological challenges that must be overcome in order to have “good science.” These challenges increase the quality of subsequent projects.

judges and juries.¹⁴⁸ This hole in legal discourse heightens the need for studies that connect implicit racial bias with the legal decisionmaking processes. One area of study in particular that deserves investigation is the way which judges and jurors remember (or forget) information from trial. Psychological research on memory reveals important clues as to how legal decisions are made.

II. MISREMEMBERING LEGAL FACTS IN RACIALLY STEREOTYPED WAYS

It should come as no surprise that the human mind does not always act like a sponge. In the legal setting, lawmakers, judges, and scholars hope but hardly expect that jurors exhibit perfect retention of trial facts, particularly in complicated trials.¹⁴⁹ Many discussions of cognitive bias, for example, detail biases that are intimately connected with judge and juror memory.¹⁵⁰ Nonetheless, despite the

148. Most studies on race in the law have focused on how race affects guilty verdicts. These studies concentrate more on the outcome than on the process. *See e.g.*, David C. Baldus, *Race Discrimination in the Administration of the Death Penalty: An Overview of the Empirical Evidence with Special Emphasis on the Post-1990 Research*, 41 CRIM. L. BULL. 6 *passim* (2005) (discussing sentencing disparities as a result of race). One potential way to overcome this gap in research is through cross-disciplinary collaborations. A few examples of recent cross-disciplinary collaborations include Blasi & Jost, *supra* note 81, at 1119 (elaborating on the implications of System Justification Theory for “law, lawyering, and advocacy for social justice”); Kang & Banaji, *supra* note 44, at 1064 (examining how the “science of implicit social cognition” may “transform both lay and expert conceptions of affirmative action”); and Mitchell & Tetlock, *supra* note 79, at 1116 (exposing the “murkiness” surrounding current IAT research and urging caution in legal reforms). Some collaborations have tested psychological phenomena in legal scenarios. *E.g.*, Levinson & Peng, *Valuing Cultural Differences*, *supra* note 99, at 34 (testing how judgments of property ownership are affected by framing effects and other cognitive biases).

149. *See Johnson v. Louisiana*, 406 U.S. 356, 389 (1972) (Douglas, J., dissenting) (recognizing that jurors’ memories are imperfect); M. Neil Brown et al., *The Shared Assumptions of the Jury System and the Market System*, 50 ST. LOUIS U. L.J. 425, 460 (2006) (questioning juror memories when scientific studies indicate that people can only store 1 percent of information as long-term memory). For a psychological study assessing juror memory retention, see Mary E. Pritchard & Janice M. Keenan, *Memory Monitoring in Mock Jurors*, 5 J. EXPERIMENTAL PSYCHOL.: APPLIED 152, 165 (1999), which demonstrates that there is no correlation between mock jurors’ predictions about or confidence in their memories and actual memory performance.

150. Several sources from the late 1990’s and 2000’s discuss the hindsight bias and the availability heuristic. *E.g.*, Hal R. Arkes & Cindy A. Schipani, *Medical Malpractice v. the Business Judgment Rule: Differences in Hindsight Bias*, 73 OR. L. REV. 587, 588 (1994); Ronald J. Gilson & Reinier Kraakman, *Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 IOWA J. CORP. L. 715, 724 n.34 (2003); Kamin & Rachlinski, *supra* note 2, at 90; Philip G. Peters, Jr., *Hindsight Bias and Tort Liability: Avoiding Premature Conclusions*, 31 ARIZ. ST. L.J. 1277, 1277 (1999); Rachlinski, *supra* note 2, at 571; April M. Perry, Comment:

understanding that jurors' memory capacities are limited and that cognitive biases persist, scholars still assume that these cognitive limitations are not embedded with racial bias. As Part I demonstrated, however, social cognition research on implicit bias has shown that people experience difficulty in performing a variety of simple cognitive tasks when basic racial constructs are active.¹⁵¹ It should not be surprising, then, to learn that when participating in cases with racially diverse legal parties, jurors (and perhaps judges) may unknowingly misremember trial information in systematically biased ways.

This Part explores research in human memory processes and presents theoretical background for my claim that implicit racial bias in memory retention of case facts hinders legal decisionmaking processes. To provide an overview of the relevant topics in memory, it explores a variety of empirical studies on the human memory. These studies include examinations of recall errors, false memory generation, the interaction between false memories and stereotypes, and memory errors known as "source monitoring errors." The discussion then turns from proof of individual memory errors to address whether memory errors committed by individuals will affect group decisionmaking processes. Taken together, research in memory and decisionmaking indicates that memory errors are normal, occur in stereotype-driven ways, and can manifest in a variety of ways that ultimately affect legal decisionmaking.

A. *Memory Errors Are Normal and Meaningful*

Scholars of memory and cognition have learned a great deal about the ways in which the human brain can systematically misremember facts.¹⁵² According to Daniel Schacter, memory errors

Guilt by Saturation: Media Liability for Third-Party Violence and the Availability Heuristic, 97 NW. U. L. REV. 1045, 1045 (2003).

151. Cf. Banaji & Greenwald, *supra* note 73, at 181 (assessing the effect of implicit gender bias on subjects' perception of certain names as famous).

152. See generally MEMORY DISTORTION: HOW MINDS, BRAINS, AND SOCIETIES RECONSTRUCT THE PAST (Daniel Schacter ed., 1995) (examining memory distortion in normal adults, children, mentally handicapped patients, and other populations); Alison P. Lenton et al., *Illusions of Gender: Stereotypes Evoke False Memories*, 37 J. EXPERIMENTAL SOC. PSYCHOL. 3 (2001) (eliciting gender-stereotype-consistent false memories using word lists); C. Neil Macrae et al., *Creating Memory Illusions: Expectancy-Based Processing and the Generation of False Memories*, 10 MEMORY 63 (2002) (finding that age and cognitive busyness increase subjects' generation of stereotype-consistent false memories).

can be grouped into two broad categories: forgotten information and distorted recollections.¹⁵³ Errors based upon both forgotten information and distorted recollections have the potential to influence the way juries recall and “mis-recall” the facts of cases. Yet few memory errors have been investigated in the context of jury decisionmaking.¹⁵⁴ Nonetheless, research on human memory processes has prospered outside the legal context.¹⁵⁵ These studies have revealed two major themes: people are generally unaware of how their memories work,¹⁵⁶ and misremembrances are not random—they are normal, predictable, and meaningful.¹⁵⁷ The first theme perhaps illustrates why legal scholars have underutilized memory research in decisionmaking discussions (though studies on eyewitness identification have incorporated it in detail).¹⁵⁸ The second theme and its implications illustrate why legal scholars should pay more attention to memory research.

Misremembrances occur outside of conscious awareness. According to C. Neil Macrae and his colleagues, people are “unwittingly duped into believing that the contents of consciousness comprise an accurate record of the experienced past, when in fact they do not. Instead, these items are false memories, illusory experiences of events, actions, and utterances that never occurred.”¹⁵⁹ But why do false memories arise and what can be learned from them? Memory researchers have found that false memories emerge regularly in the course of normal cognitive functioning and that they

153. Schacter calls these error categories the “sin of omission” and the “sin of commission,” respectively. DANIEL SCHACTER, *THE SEVEN SINS OF MEMORY: HOW THE MIND FORGETS AND REMEMBERS* 4–5 (2001).

154. For one study conducted in the legal realm, see Jeanine L. Skorinko & Barbara A. Spellman, *Stereotypic Crimes: How Group-Crime Associations Affect Memory and (Sometimes) Verdicts and Sentencing* (June 2006) (unpublished manuscript, on file with the *Duke Law Journal*). For further discussion of this study, see *infra* notes 169–71 and accompanying text.

155. Significant research on memory processes traces back several decades to an influential book, FREDERIC C. BARTLETT, *REMEMBERING: A STUDY IN EXPERIMENTAL AND SOCIAL PSYCHOLOGY* (1932).

156. CURT R. BARTOL & ANNE M. BARTOL, *PSYCHOLOGY AND LAW: THEORY, RESEARCH AND APPLICATION* 228 (3d ed. 2004).

157. See Macrae et al., *supra* note 152, at 64 (“[R]esearch reveals that we often misremember the past in ways that flatter our egos, confirm our self-theories, and serve our currently active needs and motives.”).

158. These studies are often led by psychologists rather than lawyers. See *infra* notes 190–95 and accompanying text.

159. Macrae et al., *supra* note 152, at 63.

are explainable by understanding the intricacies of the human mind.¹⁶⁰ Some memory researchers have posited that people unknowingly reconstruct the past in ways that flatter their egos and serve to bolster their theories and beliefs about themselves.¹⁶¹ Others, however, have documented the emergence of false memories in a broader range of situations.¹⁶² An investigation of these normal errors reveals that they frequently occur because of the human mind's heavy reliance on stereotypes during the encoding and recall of information.

B. Stereotypes Drive Recall Errors and False Memory Generation

Both types of memory errors, those based on recall (forgetting) and those based on distorted recollections (false memories), emerge in situations in which stereotypes are involved.¹⁶³ With respect to both encoding and recall of information, stereotypes facilitate the way the brain stores and processes information. Thus, when people attempt to recall information that is somewhat hazy in their memories, they generally rely on familiarity and expectations to help fill in the content of those memories. But familiarity and expectations can be code for stereotypes.¹⁶⁴ As a result, people often recall stereotype-consistent information more easily than stereotype-inconsistent

160. See *id.* at 65 (describing the cognitive efficiency of expectancy-driven memory).

161. *Id.* at 64 (citing Anthony G. Greenwald, *The Totalitarian Ego: Fabrication and Revision of Personal History*, 35 AM. PSYCHOLOGIST 603 (1980); Leonard S. Newman & Roy F. Baumeister, *Toward an Explanation of the UFO Abduction Phenomenon: Hypnotic Elaboration, Extraterrestrial Sado-masochism, and Spurious Memories*, 7 PSYCHOL. INQUIRY 99 (1996); and M. Ross, *Relation of Implicit Theories to the Construction of Personal Histories*, 96 PSYCHOL. REV. 341 (1989)).

162. See Henry L. Roediger & Kathleen B. McDermott, *Creating False Memories: Remembering Words That Were Not Presented in Lists*, 21 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY & COGNITION 803, 804-05 (1995) (eliciting false word recollections in purely associative domains such as categories of furniture, as opposed to stereotypical domains such as race); Henry L. Roediger & Kathleen B. McDermott, *False Alarms About False Memories*, 106 PSYCHOL. REV. 406, 406, 409 (1999) (following up on the 1995 study with similar results).

163. Stereotypes can serve important cognitive functions. Page, *supra* note 22, at 236. Nonetheless, the stereotypes I discuss in this Part are harmful stereotypes that relate race to undesirable characteristics.

164. To clarify this point, it should be noted that stereotypes are the product of repeated associations between groups of people and concepts. When African Americans, for example, are repeatedly associated with criminality, a stereotype is formed. See Greenwald & Kreiger, *supra* note 3, at 949; see also Skorinko & Spellman, *supra* note 154, at 2 ("A stereotype is a cognitive representation of the ideas, facts and images that are associated with a social group.").

information.¹⁶⁵ The link between stereotypes and memory is even stronger when looking at memory distortions such as false memories. Memory scholars have explained that people are more likely to generate false memories when the contents of these memories are consistent with stereotypes they have about the subject, actor, and situation of the memory.¹⁶⁶ The tendency of false memories and

165. Page, *supra* note 22, at 220. In cases, however, where people place more cognitive energy into the encoding phase, stereotype-inconsistent information can be recalled more easily than stereotype-consistent information. Macrae et al., *supra* note 152, at 65 (citing William A. Johnston & Kevin J. Hawley, *Perceptual Inhibition of Expected Inputs: The Key That Opens Closed Minds*, 1 PSYCHONOMIC BULL. & REV. 56 (1994)). When people perceive events, if the information they perceive deviates sufficiently from their expectations, they may actually encode it better than they will encode stereotype-consistent information. Thus, although people easily recall (and generate false memories of) stereotype-consistent information, they can accurately recall stereotype-inconsistent information if they took extra cognitive effort to encode it initially. See Macrae et al., *supra* note 152, at 68, 70 (finding that, in the gender-employment context, participants were more likely to correctly remember names that had been paired with stereotype-inconsistent occupations); K. Rojahn & Thomas F. Pettigrew, *Memory for Schema-Relevant Information: A Meta-Analytic Resolution*, 31 BRITISH J. SOC. PSYCHOL. 81, 84, 99 (1992) (asserting that stereotype-inconsistent information is "generally well encoded and well remembered" but describing conditions under which it is not); Charles Stangor & David McMillan, *Memory for Expectancy-Congruent and Expectancy-Incongruent Information: A Review of the Social and Social Developmental Literatures*, 111 PSYCHOL. BULL. 42, 55 (1992) (finding that stereotype-inconsistent information is recalled more accurately under certain conditions). But see J. Fyock & Charles Stangor, *The Role of Memory Biases in Stereotype Maintenance*, 33 BRITISH J. SOC. PSYCHOL. 331, 335-36, 339 (1994) (conducting a meta-analysis and concluding that stereotype-consistent information is remembered slightly better than stereotype-inconsistent information).

This distinction should not be too troubling. Here is an example: Imagine going to a baseball game. At different times during the game, the players are playing with different colors of baseballs: white baseballs and blue baseballs. Later, a fan who was in attendance is asked what color baseballs the players used. The fan might first recall the blue baseballs—they deviated enough from expectancy so that it was encoded more deeply within the fan's memory. But the fan will also easily recall the white baseballs. For the white balls, the fan stored the memory loosely because it matched the mental expectancy. See Macrae et al., *supra* note 152, at 65. Overall then, although stereotypes would facilitate the fan's memory of the white baseballs because the fan would not expend the extra cognitive energy to encode it perfectly, the blue baseballs would be unique enough to generate a deeper level of memory storage.

The analogy to baseball, however, is inapt when considering memories of criminal legal stories. Although people may harbor race-based expectancies for certain crimes (e.g. violent crimes-Black perpetrator), a White person's commission of a violent crime should not be as cognitively surprising as seeing a blue baseball at a game. Thus, although people can sometimes remember stereotype-inconsistent information more accurately (the blue baseball v. the white baseball), they will probably revert more easily to memory stereotypes when attempting to recall less-surprising occurrences (the White violent criminal v. the Black violent criminal). The results of the empirical study discussed in Part III support this explanation.

166. See Skorinko & Spellman, *supra* note 154, at 7; see also Macrae et al., *supra* note 152, at 64 ("[R]esearch reveals that we often misremember the past in ways that flatter our egos, confirm our self-theories, and serve our currently active needs and motives.").

stereotypes to go hand in hand emerges because people tend to misremember things that are loosely stored in the brain.¹⁶⁷ Stereotype-consistent information is stored in broad schemas rather than deeply encoded in the human memory.¹⁶⁸ When people recall certain information that is part of a web of existing schemas and stereotypes, they may erroneously (and unknowingly) create additional memories of things that never happened that are consistent with those stereotypes.

Studies show how stereotypes are implicated both in memory recall and in memory distortion. A study by Jeanine Skorinko and Barbara Spellman on memory recall demonstrates how racial stereotypes influence people's memories of crimes.¹⁶⁹ One portion of the study presented participants with scenarios of two stereotypically white crimes (ecstasy usage and identity fraud), two stereotypically black crimes (crack cocaine usage and shoplifting), and two stereotypically neutral crimes (marijuana usage and joyriding).¹⁷⁰ The race of the crime perpetrator in the stories was varied. After reading the stories, the experimenters asked participants to recall crime information by matching the race of the perpetrator with the crime. Results indicated that participants were more likely to recall the race of the defendant, black or white, when the crime matched the racial stereotypes of that defendant. For example, for identity fraud, participants were more likely to recall the race of a Caucasian perpetrator than an African-American perpetrator.¹⁷¹ The study shows that racial stereotypes can systematically affect jurors' (implicit) recollections in the legal setting, and that jurors may exhibit better recall of information about stereotypical criminals and crimes.

Skorinko and Spellman's study indicates that stereotype consistency can influence accuracy of recall. A study by Alison

167. See Lenton et al., *supra* note 152, at 4 (describing how subjects may falsely remember reading a word if it reflects the "gist" of a word list to which they were actually exposed).

168. *Id.* at 5.

169. See Skorinko & Spellman, *supra* note 154, at 2; see also Lenton et al., *supra* note 152, at 3.

170. Skorinko & Spellman, *supra* note 154, at 19, 46 app. B. The researchers pretested race-crime stereotypes to confirm the racial stereotype categorization. *Id.* at 10-19.

171. *Id.* at 24. This result indicates that racial minorities are not always on the short end of the memory stick because the biased connection is not directly between race and memory, but instead between crime-stereotype and memory. Nonetheless, because of the stereotypical connection between minorities and crime (and because violent crimes are stereotypical of African Americans), one might expect memory stereotype biases to affect African Americans and other minority groups more frequently than Caucasians.

Lenton and her colleagues expands the influence of stereotypes to include false memories.¹⁷² They presented participants with a list of words,¹⁷³ some of which were stereotypic of women (such as secretary and nurse) and others of which were stereotypic of men (such as lawyer and soldier). After participants completed a distraction task, they were given a recognition test.¹⁷⁴ Results showed that participants used gender stereotypes in creating false memories. That is, they more often (incorrectly) reported that they had seen gender-stereotyped words than non-gender-stereotyped words.¹⁷⁵ Results also indicated that these false memories were elicited implicitly. Despite the nature of their errors, most participants were completely unaware of the gender stereotype theme of the word lists.¹⁷⁶ The researchers expressed concern that the implicit creation of stereotype-consistent false memories may help to explain the “self-perpetuating nature of stereotypes and their resistance to change.”¹⁷⁷

Studies on the influence of “cognitive busyness” on stereotypes and false memories indicate that people generate even more false memories when they are under stress, distracted, older, or otherwise cognitively busy.¹⁷⁸ Recognizing that previous memory studies on

172. See Lenton et al., *supra* note 152, at 5; see also Macrae et al., *supra* note 152, at 68 (corroborating Lenton’s results for false memory generation).

173. All participants were shown sixty words that constituted gender-neutral roles and fifteen words that were gender stereotyped. Of these fifteen words, half of the participants received female stereotype roles and half received male stereotype roles. To obfuscate the gender context, the list of gender-specific stereotype roles was surrounded by the other sixty words. Lenton et al., *supra* note 152 at 5–6.

174. *Id.* at 6.

175. *Id.* at 7.

176. *Id.* The researchers considered the low awareness level to support a theory of implicit activation of stereotype-consistent information. *Id.* at 10.

177. *Id.* at 12. This “self-perpetuating nature of stereotypes” may function in the legal setting as well. If an implicit memory bias or other stereotype-driven bias ultimately leads to more criminal convictions of a stereotyped group, conviction statistics could act to reinforce stereotypes. This, in turn, could lead to more stereotype-driven errors (and additional convictions).

178. Macrae et al., *supra* note 152, at 72, 76–77. Stress, fatigue, and divided attention all impair a person’s recall ability. Even the aging process can lead to more false memories. As people age, their frontal lobe brain function decreases, and they become more likely to rely heavily on schemas at the expense of more detailed encoding processes. *Id.* at 72. This schema reliance translates into stereotype-consistent false memories. Older adults will thus generate more stereotype-consistent false memories than younger adults. Age effects increase in severity along with time-delay effects (delays between the intake of information and the recall of that information), another type of executive dysfunction. See *id.* (citing Wilma Koutstaal & Daniel L. Schacter, *Gist-Based False Recognition of Pictures in Older and Younger Adults*, 37 J. MEMORY & LANGUAGE 555 (1997)). Many researchers link age differences in false memories

stereotype consistency and false memory had used study participants whose cognitive energy was exclusively on the task at hand, Professor Macrae and his colleagues ran a study to test how attention depletion affects false memories and stereotype consistency. They employed a gender-occupation methodology that resembled Lenton and her colleagues' word pair study.¹⁷⁹ This study, however, tested both older and younger adults and gave half of the younger adult participants a simultaneous task to complete while they viewed the pairings of names and occupations.¹⁸⁰ The purpose of the simultaneous task (which consisted of counting backwards by three's from two thousand) was to split the participants' attention between the memory task and the counting task. Thus, the experimenters could test how decreased attention affects false memories and stereotypes.¹⁸¹ As expected, the results indicated that attention-depleted participants were less accurate in their memories than full-attention participants.¹⁸² In addition, the results showed that both attention-depleted young adults and full-attention older adults committed more stereotype-consistent memory errors than full-attention young adults did.¹⁸³

In the legal context, this study's results are troubling. Rarely are judges and jurors focusing on one piece of information at a time. Age, multiple jury instructions, detailed factual presentations, new and more complex legal standards,¹⁸⁴ and conflicting testimony are all

to frontal lobe brain function. *Id.* Although older people typically experience more memory errors than younger people, some younger people, such as those with poor reading comprehension skills, have a propensity for false memories. *Id.* at 77 (citing Rossana De Beni et al., *Increases in Intrusion Errors and Working Memory Deficit of Poor Comprehenders*, 51 Q. J. EXPERIMENTAL PSYCHOL. 305 (1998)).

179. See *supra* notes 172–77 and accompanying text.

180. Macrae et al., *supra* note 152, at 72–73. None of the older adults were subjected to attention depletion. Researchers only depleted the attention of a group of younger adults because they theorized that attention-depleted young adults make similar stereotype-consistent false errors to older adults giving full attention. *Id.* at 72.

181. Legal commentators can analogize attention depletion to the concept of cognitive overload in juries. See J.J. Prescott & Sonja Starr, *Improving Criminal Jury Decision-Making after the Blakely Revolution*, 2006 U. ILL. L. REV. 301, 335–36 (discussing cognitive overload and other cognitive challenges in the context of increased juror responsibilities after *Blakely v. Washington*, 542 U.S. 296 (2004)).

182. Macrae et al., *supra* note 152, at 73.

183. *Id.* at 73–74. In discussing the implications of their research findings on false memories and stereotype consistency, Macrae and his colleagues surmised that “the creation of false memories may provide yet another avenue through which perceivers can bolster their pre-existing beliefs about the world,” an implication they found “sobering.” *Id.* at 75.

184. See, e.g., Prescott & Starr, *supra* note 181, at 335–36 (foreseeing the complex task that juries may face).

likely to add to cognitive depletion. As a result, one can expect a significant amount of stereotype-consistent memory errors to manifest in the legal setting.

C. Legal Memories Gone Wrong: Source Attribution Errors

False memories are normal and can propagate stereotypes. But what types of false memories are likely to emerge in legal decisionmaking? One particular type of error, called source attribution error, may help explain how systematic memory bias may be implicated in legal decisionmaking. Although this memory error has sometimes been applied to eyewitness memory faults,¹⁸⁵ it has not been discussed in the context of juror memory errors and implicit racial bias.

Gordon Allport and Leo Postman conducted an early and influential study that illustrated a source attribution error using a version of the telephone game.¹⁸⁶ In the study (which was not originally intended to be a memory study but a study about rumors), participants viewed a picture of passengers on a streetcar (one of whom was Black). In the picture, one White passenger holds a razor blade and the Black passenger is empty-handed. After viewing the picture, participants were then asked to describe the picture to other participants who had not seen the picture. As participants told and retold the story to others, the story changed. After the story had been retold several times, some participants reported that the Black passenger—not the White passenger—held a razor blade.¹⁸⁷ The results of the study (which had originally focused on retelling accuracy) demonstrated a source attribution error—the razor blade possession shifted from one memory source (the White passenger) to another (the Black passenger). Was it a coincidence that the source attribution error reflected stereotype consistency? Quite unlikely. Rather, the study more likely stands for the proposition that stereotypes may trigger source attribution errors.¹⁸⁸

185. See *infra* notes 190–95 for a brief discussion of studies investigating eyewitness memory.

186. GORDON W. ALLPORT & LEO J. POSTMAN, *THE PSYCHOLOGY OF RUMOR* 65–68 (Russell & Russell 1965) (1947).

187. *Id.* at 70–72 & fig.7.

188. Skorinko & Spellman, *supra* note 154, at 6. A study by Richard Marsh and his colleagues supports this proposition. Richard L. Marsh et al., *Gender and Orientation Stereotypes Bias Source-Monitoring Attributions*, 14 *MEMORY* 148, 157–58 (2006) (finding that participants attributed sources of memory in a manner consistent with gender and sexual

Source attribution errors occur when a person places the source of one memory into another setting, creating an incorrect source of another memory.¹⁸⁹ In the context of eyewitness identification, the concerns created by source attribution errors are powerful and easy to conceptualize.¹⁹⁰ A victim of a crime or an eyewitness might unknowingly transfer the memory of a person or face into another context.¹⁹¹ Shortly after the Oklahoma City bombing in 1995, for example,¹⁹² a massive search commenced for John Doe No. 2,¹⁹³ “a

orientation stereotypes). For a study examining how the retelling of stories increases memory errors that are consistent with stereotypes, see Yoshihisa Kashima, *Maintaining Cultural Stereotypes in the Serial Reproduction of Narratives*, 26 PERSONALITY & SOC. PSYCHOL. BULL. 594, 594 (2000).

189. SCHACTER, *supra* note 153, at 8.

190. See *id.* at 92 (discussing the “chilling” statistics regarding mistaken eyewitness identification); see also Francis A. Gilligan et al., *The Theory of “Unconscious Transference”: The Latest Threat to the Shield Laws Protecting the Privacy of Victims of Sex Offenses*, 38 B.C. L. REV. 107, 123–24, 142 (1996) (exploring source attribution errors’ implications for the admissibility of evidence despite some lack of clarity in the field). For a comprehensive discussion of memory issues in eyewitness identification, see Ralph Norman Haber & Lyn Haber, *Experiencing, Remembering, and Reporting Events*, 6 PSYCHOL. PUB. POL’Y & L. 1057 (2000). In addition to studies on source attribution errors, studies on memory in eyewitness testimony have also connected memory errors to racial bias. These studies indicate that memory errors may occur, particularly when perpetrators are out-group members. The “own-race bias,” for example, demonstrates that people can discriminate better between faces of their own ethnic group than faces of other ethnic groups. BARTOL & BARTOL, *supra* note 156, at 253. For a discussion of own-race bias in the context of legal rules, see Sheri Lynn Johnson, *Cross-Racial Identification Errors in Criminal Cases*, 69 CORNELL L. REV. 934, 986 (1984). Research has repeatedly found that White participants are more accurate in identifying White faces than Black faces. *Id.* at 936, 938–39. A meta-analysis of thirty years of studies on own-race bias, however, confirmed that racial attitudes do not serve as predictors of own-race bias. Christian A. Meissner & John C. Brigham, *Thirty Years of Investigating the Own-Race Bias in Memory for Faces: A Meta-Analytic Review*, 7 PSYCHOL. PUB. POL’Y & L. 3, 7 (2001) (analyzing data from thirty-nine separate studies on own-race bias). That these studies have not found a connection between explicit racial attitudes and memory of out-group races indicates that own-race bias operates implicitly. When considered in the jury context, these studies suggest not only that juror memory may be subject to implicit memory biases, but also that such biases cannot be predicted by identifying explicitly biased jurors. Another widely discussed issue in the study of eyewitness memory is the role of repression, including the reemergence of repressed memories through the use of hypnosis. See, e.g., JENNIFER J. FREYD, *BETRAYAL TRAUMA: THE LOGIC OF FORGETTING CHILDHOOD ABUSE* 1–11, 197 (1996) (setting out a “betrayal trauma theory” to account for victims’ repression of memories of abuse); Elizabeth F. Loftus, *The Reality of Repressed Memories*, 48 AM. PSYCHOL. 518, 518 (1993) (providing a history of the evidence for and against the existence of repression and some of its legal and social repercussions).

191. These types of errors are well documented and have been discussed in terms of evidentiary laws. See Gilligan et al., *supra* note 190 (examining the implications of unconscious transference for rape shield laws).

192. This example was given by SCHACTER, *supra* note 153, at 91–92.

193. Timothy McVeigh was John Doe No. 1. *Id.*

young square-faced man with dark hair and a stocky build wearing a blue and white cap.”¹⁹⁴ John Doe No. 2’s description came from a mechanic who had seen Timothy McVeigh rent a van before the bombing. After a massive search, it turned out that there was no John Doe No. 2. The mechanic had simply confused another van rental transaction with McVeigh’s rental. The other rental transaction had involved two men, one of whom resembled McVeigh. The second man was a stocky square-faced man. The mechanic had unconsciously transferred memory of John Doe No. 2 from one context to the other.¹⁹⁵

If source attribution errors can cause faulty eyewitness identifications, they can also cause jurors to falsely recall case facts by attributing evidentiary facts to the wrong party without recognizing it (as illustrated by Allport and Postman’s study).¹⁹⁶ Recall *The Confrontation* story from the beginning of this Article. In attempting to remember the story, some readers might have believed that Tyronne kicked James. Such an error would constitute a source attribution error because Tyronne’s friend kicked James, not Tyronne. Memory researchers have pointed out that, as demonstrated by Allport and Postman’s results, source attribution errors can systematically occur in ways driven by stereotypes. Using an analogy from *West Side Story*, Jeffrey Sherman and his colleagues noted that “[s]tereotype-driven errors in source memory may lead you to falsely

194. *Id.*

195. *Id.* at 92. According to Schacter, the source of the mechanic’s memory error was “unconscious transference.” *Id.* Francis Gilligan and colleagues clarify that unconscious transference is closely related to source attribution errors, which they claim is the more accurate psychological terminology. See Gilligan et al., *supra* note 190, at 116. For purposes of this Article, to avoid confusion in terminology, I use source attribution error and unconscious transference interchangeably. According to Elizabeth Loftus, source attribution errors result from the malleable nature of human memory and allow eyewitnesses to confidently conclude that the wrong person committed a crime. ELIZABETH F. LOFTUS & JAMES M. DOYLE, EYEWITNESS TESTIMONY: CIVIL AND CRIMINAL 46–47 (1987). Unconscious transference is a well-documented phenomenon. According to Bartol and Bartol, two surveys indicate that between 81 and 84.5 percent of psychologists believe that evidence of unconscious transference is reliable enough to be presented in court. BARTOL & BARTOL, *supra* note 156, at 252 (citing Saul M. Kassin et al., *On the “General Acceptance” of Eyewitness Testimony Research: A New Survey of the Experts*, 56 AM. PSYCHOL. 405 (2001); Saul M. Kassin et al., *The “General Acceptance” of Psychological Research on Eyewitness Testimony: A Survey of the Experts*, 44 AM. PSYCHOL. 1089 (1989)).

196. See *supra* note 186 and accompanying text.

remember that the Sharks rather than the Jets committed homicide”¹⁹⁷

D. Connecting Memories to Decisionmaking

If implicit biases affect judge and juror memories of case facts, do these biases also affect legal outcomes?¹⁹⁸ Making such a connection requires linking the cognitive process of memory to decisionmaking itself. Put simply, if biased memories do not create biased outcomes, this concern should be moderated. Yet, no empirical studies have tested the effects of implicitly biased memories on legal decisionmaking outcomes. Inside and outside the legal setting, however, researchers have documented the crucial role memories play in decisionmaking.¹⁹⁹ It is quite likely that biased memory processes result in biased legal decisions.

Cognitive psychological research has demonstrated the importance of factual memory and recall to a variety of decisionmaking models. Nancy Pennington and Reid Hastie developed a “Story Model” of jury decisionmaking,²⁰⁰ a well-regarded framework of jury information processing and decisionmaking that focuses on understanding how jurors process information.²⁰¹

197. Jeffrey W. Sherman et al., *Bearing False Witness under Pressure: Implicit and Explicit Components of Stereotype-Driven Memory Distortions*, 21 SOC. COGNITION 213, 243 (2003). The researchers point out the legal dangers of such source transference, focusing on faulty eyewitness identification.

198. This question resembles an early challenge to implicit social cognition work. The challenge questioned the connection between implicit attitudes and behavior. That is, do people with implicit biases act on them? Evidence has indicated that implicit bias does lead to action. See Kang, *supra* note 3, at 1514–28.

199. Nancy Pennington & Reid Hastie, *Practical Implications of Psychological Research on Juror and Jury Decision Making*, 16 PERSONALITY & SOC. PSYCHOL. BULL. 90, 95 (1990) [hereinafter Pennington & Hastie, *Practical Implications of Psychological Research*]; see also Michael R.P. Dougherty et al., *Memory as a Fundamental Heuristic for Decision Making*, in EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH 125, 156 (Sandra L. Schneider & James Shanteau eds., 2003) (noting that previous models often fail to account for a variety of empirical findings linking memory to various facets of decisionmaking); Nancy Pennington & Reid Hastie, *Explanation-Based Decision Making: Effects of Memory Structure on Judgment*, 14 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY, & COGNITION 521, 521–31 (1988) [hereinafter Pennington & Hastie, *Explanation-Based Decision Making*].

200. See generally Nancy Pennington & Reid Hastie, *A Cognitive Theory of Juror Decision Making: The Story Model*, 13 CARDOZO L. REV. 519 (1991).

201. See Neil Vidmar & Shari Seidman Diamond, *Juries and Expert Evidence*, 66 BROOK. L. REV. 1121, 1138 (2001) (calling Pennington and Hastie’s theory a “widely accepted” model of jury decisionmaking). See generally Reid Hastie, *The Role of “Stories” in Civil Jury Judgments*, 32 MICH. J. L. REFORM 227 (1999) (reviewing “psychological theories of juror decision

According to Pennington and Hastie, the first step for jurors in information processing is constructing an “explanatory model” (or story) of case facts.²⁰² During the next step, jurors attempt to memorize and understand the judicial instructions regarding verdict categories.²⁰³ Finally, they attempt to fit their “story” into the judicial instructions.²⁰⁴ Because of the prominent role of story formation in this decisionmaking model, if memory errors taint the content of the story when it is formed or recalled, they will likely be preserved. These errors will remain in the stories as jurors incorporate the stories into the judicial instructions and ultimately make decisions.²⁰⁵

Research outside of the legal field supports the argument that memory functioning is crucial to decisionmaking. Focusing on models in the decision sciences (sometimes called “human judgment and decisionmaking”), Elke Weber and her colleagues argue that memory insights, particularly those related to the encoding process of information into memory, are crucial to judgment and decisionmaking models.²⁰⁶ Highlighting the importance of a memory-focused inquiry into decisionmaking, Weber and her colleagues propose that “memory can be used the way physicists use cloud chambers: to study otherwise unobservable events via the residue they leave behind.”²⁰⁷

Another decisionmaking model that highlights the importance of memory is one developed by Michael Dougherty and his colleagues.²⁰⁸

making”); Jill E. Huntley & Mark Costanzo, *Sexual Harassment Stories: Testing a Story-Mediated Model of Juror Decision-Making in Civil Litigation*, 27 LAW & HUM. BEHAV. 29 (2003) (confirming, critiquing, and expanding Pennington & Hastie’s model).

202. Pennington & Hastie, *Practical Implications of Psychological Research*, *supra* note 199, at 90–95.

203. *Id.*

204. *Id.*

205. See, e.g., Reid Hastie, *Emotions in Jurors’ Decisions*, 66 BROOK. L. REV. 991, 1007 (2001) (claiming that juror emotional processes can influence memories and thus stories that jurors construct).

206. Elke U. Weber et al., *And Let Us Not Forget Memory: The Role of Memory Processes and Techniques in the Study of Judgment and Choice*, in DECISION MAKING FROM A COGNITIVE PERSPECTIVE 33, 35 (J. Busemeyer et al. eds., 1995) (citing concern in the judgment and decisionmaking field that the focus of the field may be too narrow). Weber and her colleagues point out that Kahneman and Tversky’s prospect theory includes an “editing phase” that was based upon memory and coding operations. *Id.* at 36.

207. *Id.* at 36–37. In this vein, this Article examines memories for racial residue in the legal context.

208. Michael R.P. Dougherty et al., *Memory as a Fundamental Heuristic for Decision Making*, in EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH 125, 156

The first two stages of this three-stage model illustrate that memory encoding and retrieval errors may fundamentally alter legal decisionmaking.²⁰⁹ The first stage, called the “representational properties” stage, focuses on two complementary ways in which people store memories. According to “instance-based theories,” the brain encodes and separately stores individual memories as specific memory traces.²¹⁰ According to “abstraction-based theories,” the brain stores summaries of stimuli or events such that only “important” information is encoded (smaller details are lost).²¹¹ According to Dougherty and his colleagues, both types of representations are important for understanding and predicting how people will ultimately make decisions. Poor encoding quality on instance-based representations, for example, can have major effects on later judgments by leading people to underestimate the frequency of stimuli or to miscalculate probability judgments.²¹² Problems in abstraction-based representations, including cognitive errors such as framing effects, similarly can lead to decisionmaking problems.²¹³

(Sandra L. Schneider & James Shanteau eds., 2003) (noting that previous models often fail to account for a variety of empirical findings linking memory to various facets of decisionmaking). For another model of decisionmaking that highlights the inclusion of memory, see Valerie F. Reyna et al., *Memory, Development, and Rationality: An Integrative Theory of Judgment and Decision-Making*, in EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH 201, 201–39 (Sandra L. Schneider & James Shanteau eds., 2003). For an argument that decisionmaking studies focus on memory as a component of interrelated cognitive processes, see Elke U. Weber et al., *Beyond Strategies: Implications of Memory Representation and Memory Processes for Models of Judgments and Decision Making*, in RELATING THEORY AND DATA: ESSAYS ON HUMAN MEMORY IN HONOR OF BENNET B. MURDOCK 75, 75–94 (William E. Hockley & Stephan Lewandowski eds., 1991).

209. Dougherty et al., *supra* note 208, at 126–29. Dougherty and his colleagues argue that all three stages connect memory to decisionmaking. For purposes of this Article, I only focus on the first two. One could, however, connect the experiential stage to legal decisionmaking, particularly when examining the role of memories in judges’ decisions.

210. *Id.* at 131.

211. *Id.* This type of representational property resembles Pennington and Hastie’s story-based model.

212. *Id.* at 133.

213. *Id.* at 136 (citing Pennington & Hastie, *Explanation-Based Decision Making*, *supra* note 199); see also *id.* at 137 (“For example, Reyna and Brainerd . . . argued that framing effects are not due to the processing of numerical information . . . but are attributable to qualitative processing. . .”). Various legal scholars have focused on the legal impact of framing effects. See, e.g., Chris Guthrie, *Framing Frivolous Litigation: A Psychological Theory*, 67 U. CHI. L. REV. 163, 167 (2000); Edward J. McCaffery et al., *Framing the Jury: Cognitive Perspectives on Pain and Suffering Awards*, 81 VA. L. REV. 1341, 1345–46 (1995); Edward A. Zelinsky, *Do Tax Expenditures Create Framing Effects? Volunteer Firefighters, Property Tax Exemptions, and the Paradox of Tax Expenditure Analysis*, 24 VA. TAX REV. 797, 798 (2005). These scholars, however, generally overlook the role of abstraction-based memory processes in framing effects.

The second stage, called the “retrieval from memory” stage, focuses on how people recall information.²¹⁴ According to Dougherty and his colleagues, simple biases and errors in memory retrieval can ultimately affect decisionmaking. For example, memory retrieval can be compromised by ordering effects such as the primacy effect, which describes people’s tendency to remember things that are presented first in a sequence.²¹⁵ Because it skews the recall accessibility of items presented in a certain order, such a basic memory error will ultimately lead to altered decisionmaking. Thus, at each of the first two stages of the model developed by Dougherty and his colleagues, memory errors can have a systematic effect on decisionmaking.

In light of the compelling research linking memory to decisionmaking, the connection between implicit memory biases and legal decisionmaking processes becomes even more intimate. If implicit memory biases affect judge or juror encoding or retrieval of information, such effects are likely to carry through to legal decisionmaking.

E. Can Deliberations Cure Memory Errors?

The research discussed in Section D indicates that memory plays an integral role in human decisionmaking processes. Nonetheless, most of the studies have focused on individual decisionmaking. Though judges (except those who sit on panels or who work with clerks in a particularly collaborative manner) often engage in individual decisionmaking, juries make decisions as groups. Thus, before concluding that individual memory biases affect legal outcomes, one must first look at research on the relationship between individual and group decisionmaking.²¹⁶ Such scholarship indicates

214. Dougherty et al., *supra* note 208, at 139–40. The third stage of the model is called “experience and domain knowledge.” *Id.*

215. *Id.* at 140–41. One early example of primary effect was demonstrated by research on people’s impressions of others. This research showed that people develop more positive impressions of others when they learn positive information about those people before negative information. When they learn negative information first, more negative impressions follow, even when the total mix of information is the same. *Id.* at 141 (citing N.H. Anderson & S. Hubert, *Effects of Concomitant Verbal Recall on Order Effects in Personality Impression Formation*, 2 J. VERBAL LEARNING & VERBAL BEHAV. 379 (1963)).

216. A variety of studies have investigated whether racial discrimination occurs in legal verdicts. Most of these studies focus on the outcome of the legal question, whether a criminal defendant is guilty or not guilty, but do not focus on bias in the decisionmaking process. Samuel Sommers and Phoebe Ellsworth quantitatively evaluated the scholarship on race and legal decisionmaking. Samuel R. Sommers & Phoebe C. Ellsworth, *How Much Do We Really Know*

that group decisionmaking processes typically do not alter already completed individual decisionmaking. As a result, memory errors made by individual jurors are preserved rather than corrected.²¹⁷

Pennington and Hastie's "Story Model" of decisionmaking helps evaluate whether jury deliberations are likely to correct memory biases.²¹⁸ This model has identified two styles of juries, those that are "evidence-driven" and those that are "verdict-driven."²¹⁹ One style of jury has an opportunity to correct memory errors, whereas the other does not. According to Pennington and Hastie, "evidence-driven" juries first come to agreement about the story to reconcile different juror stories about what happened.²²⁰ Juries that engage in this type of decisionmaking process might have the cognitive opportunity to correct memory errors. "Verdict-driven" juries, on the other hand, skip the early story stages and move ahead to the verdict stage. In doing so, they likely preserve individual juror's stories of the evidence, thus solidifying memory errors that have been incorporated into their stories. Overall, then, Pennington and Hastie's model indicates that some juries have an opportunity to correct memory errors, but others do not.

Research by Mary Pritchard and Janice Keenan indicates that jury deliberation often fails to correct memory errors, casting doubt upon whether even "evidence-driven" juries take advantage of the opportunity to improve memories during the story reconciliation

About Race and Juries? A Review of Social Science Theory and Research, 78 CHI.-KENT L. REV. 997, 1021 (2003). Their study indicated that existing studies on jury decisionmaking and race reveal "less . . . than meets the eye." *Id.* at 1029. Some studies, however, reveal outcome differences based on race. See Nancy J. King, *Postconviction Review of Jury Discrimination: Measuring the Effects of Juror Race on Jury Decisions*, 92 MICH. L. REV. 63, 129 (1993); Tara L. Mitchell et al., *Racial Bias in Mock Juror Decision-Making: A Meta-Analytic Review of Defendant Treatment*, 29 LAW & HUM. BEHAV. 621, 633 (2005) (finding small but significant differences in race effects on verdicts). Studies outside of the legal context reveal a complex relationship between decisionmaking in racial contexts and the nonracial explanations given by decisionmakers. See Michael I. Norton et al., *Mixed Motives and Racial Bias: The Impact of Legitimate and Illegitimate Criteria on Decision Making*, 12 PSYCHOL. PUB. POL'Y & L. 36, 52 (2006).

217. In some cases, jury deliberations may aggravate, rather than ameliorate, biases. See Prescott & Starr, *supra* note 181. See generally Cass R. Sunstein, *Group Judgments: Statistical Means, Deliberation, and Information Markets*, 80 N.Y.U. L. REV. 962 (2005) (discussing a variety of problems that arise in group deliberative processes).

218. See *supra* notes 202–04 and accompanying text.

219. Pennington & Hastie, *Practical Implications of Psychological Research*, *supra* note 199, at 99.

220. *Id.*; see also REID HASTIE ET AL., *INSIDE THE JURY* 163–65 (1983) (describing the decisionmaking process of "evidence-based" juries).

stage. Interested in how successful the jury deliberation process is in correcting false memories of individual jurors, Pritchard and Keenan examined whether deliberations worked to reduce or eliminate memory errors.²²¹ They measured how event memories were initially formed and how these event memories changed during the course of deliberations. Results indicated that deliberation only slightly improved memory errors (even though participants only accurately remembered 60 percent of the information tested)²²² and that the most vocal and dominant jurors were not always the ones with the most accurate memories.²²³ They also found that those jurors who were more likely to change their verdict were jurors with less confidence in their memories, but not necessarily those with the least accurate memories.²²⁴ The researchers concluded that the legal system's assumption that deliberation improves memory "is only weakly supported."²²⁵ Another study by Pritchard and Keenan indicates that individual jurors are not able to catch or correct their own memory errors.²²⁶ In that study, Pritchard and Keenan tested mock juror memory accuracy as well as confidence in the accuracy of their memories.²²⁷ Results indicated that jurors who were the most confident in their memories were not necessarily the most accurate.²²⁸ These studies indicate that if individual juror memories are tarnished by racially biased recall errors and false memories, then neither self-monitoring nor jury deliberation will significantly improve the problem.

Taken as a whole, research on human memory processes indicates that people systematically and implicitly make stereotype-

221. Pritchard & Keenan, *supra* note 8, at 590.

222. *Id.* at 600. This 60 percent may be significantly higher than in real trials. As Pritchard and Keenan point out, the trial they used in the study lasted only thirty-five minutes and participants were college students ("who tend to have better memories than the typical jury pool"). *Id.*

223. *Id.* at 595, 600.

224. *Id.* at 600.

225. *Id.*

226. Pritchard & Keenan, *supra* note 149, at 165.

227. *Id.*

228. *Id.* at 161. Participants, however, were fairly accurate in their ex post assessments of their memories. These results mirror one of the major flaws encountered in eyewitness testimony—that jurors erroneously assume that confident eyewitnesses are the most accurate ones. See Gary L. Wells & Amy L. Bradfield, "Good, You Identified the Suspect": Feedback to Eyewitnesses Distorts Their Reports of the Witnessing Experience, 83 J. APPLIED PSYCHOL. 360, 361 (1998).

driven memory errors. It also indicates that these errors are likely to affect decisionmaking and that the nature of group deliberations is unlikely to help.

III. FORGOTTEN EQUALITY: AN EMPIRICAL STUDY

To test whether implicit racial bias manifests in the accuracy of juror memories, I employed an empirical study designed to examine whether people's recollections of legal stories are shaped by the race of the actors in the stories. The test revealed a variety of systematic and implicitly biased memory errors. This Part presents the methodology and results of the study.

A. *Methods*

1. *Participants.* The study involved 153 undergraduate students in a psychology course at the University of Hawai'i who participated in the study for course credit.²²⁹ The average age of the participants was 21.75 years. Of the participants, 71.2 percent were women. Unlike some studies that test only members of the Caucasian community compared to members of a minority population, participants in the study came from a wide range of ethnic backgrounds. Thirty participants identified themselves as Japanese American,²³⁰ twenty-nine participants identified themselves as Caucasian, three participants identified themselves as Hawaiian, and no participants identified themselves as African American. Seventy-two participants identified themselves as being from mixed ethnic backgrounds.²³¹ Six

229. Prior to conducting data analysis, data from international student participants were excluded from the data set. These participants (those who had lived overseas for four or more years) were excluded from the data set because implicit memory biases likely rely on culture-specific stereotypes. After these participants were excluded from the data set, 153 participants remained in the data pool.

230. This number (as well as the number of participants in the Caucasian, Hawaiian, and African-American groups listed) does not include participants who identified themselves as having multiple ethnicities, even if one of those ethnicities was Japanese (or, in the relevant cases, Caucasian, Hawaiian, or African American). Participants who indicated more than one ethnic background are listed separately in the text.

231. These participants indicated each of their ethnic identities, but these combinations are too numerous to list here and in some cases identification could compromise the anonymity of the survey instrument.

participants identified themselves as members of other ethnic groups.²³²

2. *Materials.* Participants read two unrelated stories. One story described the circumstances surrounding a fistfight (a story I called *The Confrontation*),²³³ and the other detailed circumstances surrounding an employee who was terminated. After reading the stories, participants returned the stories to an experimenter and received a questionnaire that contained a brief “distraction task.” The distraction task was designed to take approximately five to ten minutes and was composed primarily of word completion questions and analytical reasoning questions. The goal of the distraction task, as is common in memory recall studies, was to eliminate immediate memory effects (those that would only linger a few minutes). After completing the distraction task, participants were asked to answer questions about the stories they read. The stories were as follows.

Story 1.

William,²³⁴ a 23 year old Caucasian man, first encountered James, a 30 year old plumber, when they accidentally bumped elbows in a crowded bar. In the accident, James spilled beer onto William’s shirt and shorts. William was angry but the encounter ended when a bar employee took him by the arm and led him away. As William walked away with the bar employee, James smiled at William and chuckled. An hour after leaving the bar, William and a friend spotted James outside a local diner. They approached James slowly, and William said: “Why did you bump into me back there?” James said nothing and just looked down. William and his friend moved closer to James and William repeated his question. James said: “Hey listen . . . it

232. These were groups that were not listed on the checklist the survey instrument provided. Some of the participants who were in this category separately indicated their ethnic identity on a line next to the check mark, including participants who checked one or more of the listed ethnicities in addition to marking “other.” The groups identified by those who marked “other” included Koreans, Samoans, Vietnamese, North Africans, Portuguese, Puerto Ricans, and others.

233. The story name or even the existence of a story name, of course, was not part of information given to participants.

234. As will be described *infra* text accompanying notes 238–39, only participants randomly assigned to the Caucasian “experimental condition” read about William, a Caucasian. Participants randomly assigned to the African-American experimental condition read about Tyronne, an African American, and participants randomly assigned to the Hawaiian experimental condition read about Kawika, a Hawaiian. This type of experimental design is known as a “between subjects design.”

sounds like you had too much to drink. . .you don't handle your liquor too well. Let it go." William and his friend looked at each other and started laughing. William's friend took a step towards James and said: "What if we won't let it go?" When he took another step towards James, James moved forward, shoved him with both hands, and said: "Get out of my face." Without hesitating, William then stepped forward and tried to shove James in the chest, but missed and hit him in the face. James fell back slightly. He then turned around, took a couple steps away from William, and appeared to reach for something in his pocket. William quickly pursued James from behind and punched him in the side of the head. James fell to the ground. William's friend stepped forward and kicked James. William and his friend then walked away quickly and quietly.

Story 2.

Brenda,²³⁵ a 28 year old Caucasian woman, worked as a "purchasing clerk" in the corporate offices of Big Burger Company, a small chain of hamburger joints. Brenda represented the second generation of her family to work at the offices of Big Burger Company. In fact, her father was once employee of the month at the company. Brenda's job required that she work five days a week for eight hours a day. She was permitted one hour for lunch and two fifteen minute breaks. Another employee, Jimmy, shared a cubicle with Brenda. Jimmy, who worked for the public relations department as a marketing clerk, was occasionally sloppy with his work. Sometimes, when he was unable to complete the work assigned, Brenda helped him with his projects, which usually involved using the web to generate internet publicity and create new business. Jimmy and Brenda even occasionally dined together in Big Burger's company cafeteria, where Jimmy always ate burgers and french fries.

While at her desk, in addition to conducting her duties, Brenda frequently surfed the web and wrote an internet "blog," a journal that chronicled her daily life as a corporate purchasing clerk. Surfing the web for personal business was listed as a prohibited activity by the Big Burger Employee Handbook. Despite her web surfing, Brenda routinely worked longer hours than was required of her, and always finished her assigned work. In addition, her high quality work was

235. Only participants assigned to the Caucasian experimental condition read about Brenda. Participants assigned to the African-American experimental condition read about Keisha, an African American, and participants assigned to the Hawaiian experimental condition read about Ka'olu, a Hawaiian.

documented by her boss, who consistently filed reports praising her hard work, intellect, and dedication. Brenda did, however, occasionally make long-distance phone calls from her work phone. She also occasionally let her friend, who worked in the shipping department, come and surf the web on her computer, so long as he did it during his fifteen minute breaks.

Brenda had an employment agreement with Big Burger Company that stated: "The Company shall not terminate the Employee without good cause, such as the commission of a felony or other morally questionable actions." One day, Brenda posted a web blog that said: "Big Burgers should be called Blah Burgers. The burgers are so darn boring I wouldn't eat them if I didn't get them for free." Even though her blog was anonymous, Jimmy saw her posting the message. The next day, the company announced that Brenda's boss had been promoted to another office. Brenda's new boss came and introduced himself. He told Brenda that his performance expectations were extremely high for her, and that he wouldn't tolerate substandard work or any other insubordination. Brenda was fired five days later. At first she received no explanation, but was later sent a letter stating that she failed to meet the "expected standards of employee conduct."

After completing the distraction tasks, participants were asked to read and respond to sixteen recall questions about each of the stories. Participants were instructed to circle "yes" next to facts that were accurately reported from the story. If a fact did not accurately describe a fact from the story, or if the fact was not in the story at all, participants were instructed to circle "no."²³⁶

The yes/no questions were designed to test how participants recalled certain types of information from the stories. For the fight scenario, the sixteen questions presented were composed of six actor aggression questions, six mitigating circumstances questions, and four neutral questions. Aggressiveness questions described an aggressive action, such as, "William punched James from behind," or "After James fell to the ground, William kicked him." Mitigating behavior questions described facts that would potentially justify the actor's action or lessen his legal or moral responsibility. Mitigating statements included, "After being punched, James took out an object from his pocket," or "When William hit James in the face, he was really trying to push him rather than punch him." Neutral questions

236. These dependent variable measures are reproduced in their entirety in Appendix A.

described facts that would be less relevant in a legal action, such as "William wore a tee shirt and jeans," or "James worked as a plumber." Aggressiveness and mitigating behavior question indexes were split into two smaller indexes: one for accurate statements (to test for recall errors) and one for inaccurate statements (to test for false memories).

For the employment termination scenario, the sixteen questions presented were composed of six actor favorable questions (facts relating to good job performance), six actor unfavorable questions (facts relating to bad job performance), and four actor neutral questions. Half of the questions accurately described facts from the story (thereby testing recall accuracy) and half did not (thereby testing false memories).

Because of the design of the questions, participant responses could be analyzed to determine not simply the accuracy of people's memories, but also whether errors in memory could systematically demonstrate that implicit racial bias manifests in legal decisionmaking processes. For example, if participants who read about an African-American employee more frequently (falsely) recalled that she had received mixed reviews from superiors, whereas participants who read about a Caucasian employee more frequently (correctly) recalled that she had received positive reviews, it would indicate that the race of the employee affected participants' memories in racially biased ways.²³⁷

The primary independent variable was the race of the protagonist of the story.²³⁸ For the fight story, participants read about either William, a Caucasian man, Tyronne, an African-American man, or Kawika, a Hawaiian man. For the employment story, participants read either about Brenda, a Caucasian woman, Keisha, an African-American woman, or Ka'olu, a Hawaiian woman. Participants were randomly assigned to a race experimental

237. Of course, this conclusion assumes that differences in these memory error rates were statistically significant.

238. Legal culture/Nonlegal culture was another independent variable. Results for that variable, however, were mostly not significant and are not discussed in this Article. A few individual significant results on this variable did emerge, but displayed effects in opposite directions. Future projects will continue to examine the effects of this variable. For a discussion of legal culture and its effects, see generally Levinson, *supra* note 50.

condition.²³⁹ Other than the names and races of the actors, which were explicitly identified in the stories, the stories were identical.

Most empirical studies on race and law typically have used a Black-White study paradigm.²⁴⁰ Though this paradigm reflects a significant piece of historical discrimination in the United States, it is an incomplete attempt to understand the complex nature of culture and discrimination. The increasing diversity within the United States²⁴¹ requires attention to a broader scope of racial and cultural diversity in empirical legal studies.²⁴² In addition to testing the traditional Black-White paradigm, the study investigated how implicit racial bias may manifest in memory processes relating to Native Hawaiians. Although the population of Native Hawaiians is not large outside the state of Hawai'i, the history of the Hawaiian people is complex, meaningful, and can demonstrate the power of stereotypes in the legal context.²⁴³ By conducting the empirical study in Hawai'i, the study could achieve three goals that would have been difficult

239. Participants read about actors of the same race in both stories. For example, participants who read about Tyronne also read about Keisha. This was done to reduce the chances that participants would recognize what was being tested.

240. See Sommers & Ellsworth, *supra* note 216, at 1016–19 (reviewing a variety of mock jury studies). But see, e.g., Harmon M. Hosch et al., *A Comparison of Anglo-American and Mexican-American Jurors' Judgments of Mothers Who Fail to Protect Their Children from Abuse*, 21 J. APPLIED SOC. PSYCHOL. 1681 (1991) (reviewing two experiments on the differences in responses between Mexican-American jurors and Anglo-American jurors).

241. See U.S. Census Bureau, U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin, <http://www.census.gov/ipc/www/usinterimproj> (last visited Nov. 12, 2007) (displaying population projections until 2050, based on numbers in 2000 census).

242. Studies outside of the law, particularly using the IAT, have incorporated a wide range of studies testing implicit biases that spans well beyond the Black-White paradigm. IAT Corp., Project Implicit, <https://implicit.harvard.edu> (last visited Nov. 12, 2007) (offering IATs testing implicit attitudes regarding Arabs and Muslims, Native Americans, and Asian Americans, among others).

243. For more on the challenges faced by the Hawaiian community in the legal system, see, for example, NATIVE HAWAIIAN RIGHTS HANDBOOK (Melody Kapilialoha MacKenzie ed., 1991), Jennifer M.L. Chock, *One Hundred Years of Illegitimacy: International Legal Analysis of the Illegal Overthrow of the Hawaiian Monarchy, Hawai'i's Annexation, and Possible Reparations*, 17 U. HAW. L. REV. 463, 512 (1995), Chris K. Iijima, *Race over Rice: Binary Analytical Boxes and a Twenty-First Century Endorsement of Nineteenth Century Imperialism in Rice v. Cayetano*, 53 RUTGERS L. REV. 91, 97 (2000), Noelle M. Kahanu & Jon M. Van Dyke, *Native Hawaiian Entitlement to Sovereignty: An Overview*, 17 U. HAW. L. REV. 427, 461–62 (1995), Le'a Malia Kanehe, *Recent Development, The Akaka Bill: The Native Hawaiians' Race for Federal Recognition*, 23 U. HAW. L. REV. 857, 904–06 (2001), Jon M. Van Dyke, *The Political Status of the Native Hawaiian People*, 17 YALE L. & POL'Y REV. 95, 102 & n.41 (1998), and Eric K. Yamamoto, *Rethinking Alliances: Agency, Responsibility and Interracial Justice*, 3 UCLA ASIAN PAC. AM. L.J. 33, 47–65 (1995).

elsewhere: (1) it could investigate the linkages between Hawaiians and implicit memory bias in a culturally and legally relevant context, (2) it could examine African-American bias and stereotypes in a community with a historically small African-American population²⁴⁴ (finding implicit biases against African Americans in Hawai'i might tend to illustrate the power of implicit racial bias and its propagation through external sources such as media); and (3) it could test biases and stereotypes among a diverse population, which would indicate that implicit biases are manifested in the legal setting by a broader (not just Caucasian) juror population.²⁴⁵

After completing the recognition task, participants responded to the Social Dominance Orientation (SDO) test.²⁴⁶ By testing participants on both the memory study and the SDO, I could examine the relationship, if any, between implicit memory bias and explicit racial preferences. The SDO test used in this study was the fourteen-item SDO introduced by Pratto and her colleagues.²⁴⁷ It included the following measures, among others:²⁴⁸

244. There is, however, a meaningful history of African Americans in Hawai'i. See generally *THEY FOLLOWED THE TRADE WINDS: AFRICAN AMERICANS IN HAWAII* (Miles Jackson ed., 2004).

245. Many studies on race and juries have tested biases only among groups of Caucasian participants. Based on the implicit theories I have described, a diverse group of participants might be just as susceptible to memory biases. Due to its diverse population and university community, Hawai'i provides a natural place for such investigations. In the study I conducted, only twenty-nine participants identified themselves as exclusively Caucasian (this number does not include participants who marked multiple ethnic identities, one of which may have been Caucasian). This statistic would tend to indicate that results favoring Caucasians would not simply be driven by an in-group bias. See Sommers & Ellsworth, *supra* note 216, at 1006 (pointing out that many studies of the influence of race on jury decisionmaking have only used Caucasian participants); see also Mitchell et al., *supra* note 216, at 623–24 (making a similar observation in the context of mock jury studies on racial bias). Instead, it indicates that (pro-Caucasian or anti-African American) implicit racial biases can be harbored across a variety of races. See *supra* notes 82–85 and accompanying text (discussing how members of disfavored groups sometimes display implicit preferences for more favored groups).

246. See *supra* notes 75–77 and accompanying text. Participants responded to this task last because using an explicit measure of racial preferences can activate racial attitudes and therefore affect later memory responses. Although it is possible that using the memory measure first might prime racial attitudes and influence the later SDO results, this is a lesser risk due to the implicit nature of the task.

247. Pratto et al., *supra* note 75, at 760.

248. The rest of the measures were: "All humans should be treated equally" (R); "Increased social equality" (R); "Some people are just more worthy than others"; "To get ahead in life, it is sometimes necessary to step on others"; "In an ideal world, all nations would be equal" (R); "Some people are just more deserving than others"; "Equality" (R); "It is not a problem if some people have more of a chance in life than others"; "Some people are just inferior to others";

- *Some groups of people are simply not the equals of others;*
- *This country would be better off if we cared less about how equal all people were;*
- *It is important that we treat other countries as equals;*²⁴⁹
- *If people were treated more equally we would have fewer problems in this country.*

Participants were instructed to respond whether they had a positive or negative feeling about the items. For each item, they assigned a score. A score of “1” indicated very negative and a score of “7” indicated very positive.²⁵⁰

B. Hypotheses

This study was designed to test the following hypotheses:

- (1) The accuracy of participants’ memories in recalling legal stories would be affected by the race of the actors in the stories;
- (2) Participants would make memory errors in a manner harmful to African Americans and Hawaiians but helpful to Caucasians; and
- (3) Participants who exhibited more implicit bias in making memory errors would not necessarily be those who exhibited more explicit bias.

C. Limitations of the Study

The study complements existing discourse on implicit biases and memory errors and provides support for the theory that implicit racial bias affects case fact memories within the legal process. Nonetheless, this study should only begin the empirical examination of implicit racial biases in case fact memories. The methodology used in the

“Increased economic equality” (R). *Id.* Items marked “(R)” are reverse scored because the statements reveal attitudes opposite to those stated in the other items. Reverse scoring also helps to ensure that participants carefully read the questionnaire, among other things.

249. The third and the fourth items in this list are “reverse scored.” *See supra* note 248.

250. Each number has its own label. A score of “2” means “negative.” A score of 3 means “slightly negative.” A score of 4 means “uncertain or neutral.” A score of 5 means “slightly positive.” A score of 6 means “positive.” *Id.* at 745. To convert the responses into a total score, half of the measures were reverse coded (for example, scores of 7 are converted to scores of 1) and the responses were totaled. *Id.* at 760.

study imperfectly matched true legal processes. For example, the study used stories that resembled some aspects of real-life cases, but did not use real cases. The study also tested university study participants, not real jurors (or judges). Rather than participating in a trial, participants simply filled out a multipart survey. This survey presented the facts from only one perspective, and was quite far from matching true trial processes, which allow for exposure to multiple witnesses' perspectives as well as the opportunity for attorneys to cross-examine witnesses. For these reasons and others,²⁵¹ this empirical study alone should not be considered conclusive proof that the results generalize to the legal setting.²⁵² Taken in the context of existing research on implicit biases and memory errors, however, the study offers significant support for that claim and should generate real-life concerns about racial justice in legal processes.

D. Results: Failed Memories and Racial Minorities

Participants misremembered certain legally relevant facts in a racially biased manner. The most telling results emerged from participant memories of *The Confrontation*. Systematic errors in recall affected participants' memories of *The Confrontation* in a manner harmful to African Americans, and to a lesser extent, to Hawaiians.

1. *Remembering and Misremembering Aggression in The Confrontation.* Participants had an easier time successfully recalling aggressive facts when the actor was African American compared to

251. Another example of the disconnect between the study and real legal processes is the ease and simplicity of the stories that were tested. A real case would involve vastly greater amounts of information. The judicial process thus requires a much more significant cognitive effort by jurors to encode and recall information. Recall, however, that studies on cognitive depletion indicate that the greater the attention depletion, the greater the likelihood of stereotype-consistent false memories. See Macrae et al., *supra* note 152, at 72. This memory limitation raises the issue of whether memory biases in real cases might be worse than the empirical study illustrates.

252. Most studies fail in one way or another to replicate the legal setting. One particularly impressive effort to replicate the jury environment was conducted by Samuel Sommers. Samuel R. Sommers, *On Racial Diversity and Group Decision-Making: Informational and Motivational Effects of Racial Composition on Jury Deliberations*, 90 J. PERSONALITY & SOC. PSYCHOL. 597 (2006). Sommers gained access to Washtenaw county (Michigan) courts, where jurors were given an option to participate in his study or a real case. See *infra* notes 323–26 and accompanying text for a discussion of this study and its implications.

when the actor was Caucasian.²⁵³ Combining the responses to all the accurate aggression facts, participants who read about Tyronne had a recall accuracy rate of 80.2 percent. That is, they failed to recall just 19.8 percent of facts accurately relating to the actor's aggressive actions. Participants who read about Kawika failed to recall 28.2 percent of these facts, and participants who read about William failed to recall 32.2 percent of these aggressive facts. Thus, participants were more likely to remember Tyronne's aggressive behavior than William's aggressive behavior, even when the facts were quite simple and only fifteen minutes or so had elapsed since they read the facts. Two instances detailing results of accurate aggressive fact recall help illustrate this finding.²⁵⁴

Example 1 (Aggression—Failed Recall): “When they saw him outside a diner, [William/Kawika/Tyronne]²⁵⁵ and his friend approached James.”²⁵⁶

This fact, which would tend to indicate that William initiated the fight,²⁵⁷ accurately reflected information from the story. Participants who read about Tyronne or Kawika were significantly more likely to recall correctly this information than participants who read about William.²⁵⁸ Although a resounding 92 percent of participants who read

253. This result, indicated by an ANOVA (a statistical analysis that tests variance of responses), was significant when comparing the three race experimental conditions, $F(2, 145) = 3.47$, $p < .05$. Post-hoc Tukey tests comparing the three race experimental conditions revealed that the race of the actor predicted memory accuracy of aggressive facts when comparing the Caucasian and African-American experimental conditions, $p < .05$.

254. Chi-square analyses were performed on individual instances of fact recall. These tests compared two measures: (1) a race measure comparing the three racial conditions against each other in one test, and (2) a majority-minority measure comparing the Caucasian condition to a combined group of the Hawaiian and African-American conditions.

255. The use of brackets indicates that participants read about only one of the three actors. That is, some participants read about William, some read about James, and some read about Tyronne. Participants were randomly assigned into these groups.

256. Fight Dependent Variable Number Fourteen. See *infra* Appendix A.

257. To avoid the continued use of brackets in the text, for simplicity purposes I sometimes refer to just one name when discussing the recall measures.

258. This finding was statistically significant when comparing responses for Kawika to William, $p < .05$ and was marginally significant when comparing all three race conditions to each other, $p < .07$. It was also significant when combining responses for the Hawaiian and African American race conditions to create a combined index of Caucasian versus non-Caucasian, $p < .05$.

about Tyronne or Kawika correctly recalled this aggressive action, only 77 percent who read about William recalled it.²⁵⁹

*Example 2 (Aggression—Failed Recall): “[William/Kawika/Tyronne] punched James from behind.”*²⁶⁰

This fact also accurately reflected information from the story. Participants who read about Tyronne were more likely to recall correctly this fact compared to participants who read about William or Kawika. Recall rates of only around 50 percent indicate that participants in all groups had a difficult time remembering this fact. Yet the recall rates nonetheless point toward a race-based memory bias. Only 35 percent and 43 percent of the participants who read about Kawika and William, respectively, accurately recalled this aggressive fact, whereas 59 percent who read about Tyronne accurately recalled it.²⁶¹

Although participants recalled accurate aggressive facts in racially biased ways, statistical analysis did not indicate that they generally had more false memories of aggression when reading about an African-American actor compared to a Caucasian actor.²⁶² A significant false memory effect, however, did emerge on one of the three false memory measures. This example indicates that false memories can manifest in the legal setting in biased ways.

*Example 3 (Aggression—False Memory): “After James said ‘Let it go,’ [William/Kawika/Tyronne] replied by saying ‘What if we won’t let it go?’”*²⁶³

This statement inaccurately depicts information from the story and demonstrates the potential connection between false memories,

259. Appendix B presents a chart, organized by experimental condition, of the results for the individual examples presented in this Part.

260. Fight Dependent Variable Number Ten. *See infra* Appendix A.

261. This finding was significant, $p < .05$, when comparing responses for Tyronne against combined responses for William and Kawika. It was marginally significant, $p = .055$, when comparing all three race conditions against each other, and when comparing responses for Tyronne compared to William only, $p = .071$.

262. Specifically, the effects of the race experimental condition were not significant on the index of combined false memory questions. This index combined participant responses for the three false memory questions on aggressive actions into one index measure. I created this index to test for overall patterns in false memories of aggression.

263. Fight Dependent Variable Number Five. *See infra* Appendix A.

source attribution errors, and implicit memory bias.²⁶⁴ Participants who read about Tyronne or Kawika were more likely to exhibit false memories for this fact than participants who read about William.²⁶⁵ In fact, 70 percent of participants who read about Tyronne or Kawika mistakenly believed that the statement was accurate. For participants who read about William, 56 percent mistakenly believed it was accurate. Thus, although the majority of all participants misremembered this fact, participants who read about an African American or Hawaiian were significantly more likely to misremember it in a manner that would be detrimental to the actor in a legal proceeding.

2. *Remembering and Misremembering Mitigating Factors in The Confrontation.* With respect to recall accuracy of mitigation questions, no significant index differences emerged based on the race of the actor. For false memories of mitigating circumstances, however, an unexpected result emerged. Participants who read about Kawika were more likely to exhibit false memories of mitigating facts compared to participants who read about William or Tyronne.²⁶⁶ Participants who read about Kawika exhibited false memories for 49 percent of the inaccurate mitigating facts. These facts, if true, would have tended to lessen Kawika's legal or moral responsibility for the incident. Participants who read about William and Tyronne exhibited false memories for fewer mitigating facts, 38 percent and 37 percent of these questions, respectively. These results indicate that the nature of implicit biases in memory recall are complex and can be multidirectional (they can simultaneously penalize and mitigate). In recalling aggressive actions, participants' memories sometimes worked to penalize Kawika, as in Example 1. But in recalling mitigating facts, participants' memories sometimes worked to help

264. Recall from *The Confrontation* that it was the actor's friend, not the actor himself, who made that aggressive statement.

265. A chi-square analysis indicated that this result was significant, $p < .05$, in comparing responses for William to combined responses for Tyronne and Kawika (thus testing responses for a Caucasian actor compared to non-Caucasian actors). It was also marginally significant when comparing responses for Tyronne directly to responses for William, $p = .062$.

266. When comparing participants who read about Kawika to a combined group of participants who read about either William or Tyronne, an ANOVA was significant, $F(1, 150) = 5.86, p < .05$. When comparing separately all three race experimental conditions, an ANOVA on the false memory mitigation was marginally significant, $F(2, 149) = 2.94, p = .056$.

Kawika. An instance of a mitigating false memory question helps demonstrate this finding.

*Example 4 (Mitigating—False Memory): James shoved [William/Kawika/Tyronne].*²⁶⁷

This mitigating statement inaccurately reflected the story and thus, if recalled by participants, would constitute a false memory. In the story, James shoved Kawika's friend, not Kawika.²⁶⁸ If James had in fact shoved Kawika, it would tend to mitigate later aggressive actions taken by Kawika (recall that Kawika responded to the shove of his friend by hitting James). Significant results emerged for this statement when comparing responses of participants reading about Kawika to those reading about William and Tyronne. Of participants who read about Kawika, 75 percent exhibited this false memory, compared to 57 percent of participants who read about William and 53 percent of participants who read about Tyronne.²⁶⁹

It is too early to interpret this result confidently. A possibility worth exploring, however, relates to the complex and unique relationship between localism in the community²⁷⁰ (among Native Hawaiian and non-Hawaiian people alike) and positive and negative stereotypes. Such a unique dynamic could simultaneously implicate negative stereotypes of aggression and more positive stereotypes regarding mitigation (understanding the historical and societal role and prevalence of the provocation of Hawaiians, for example).²⁷¹ As a result, the false memory result could be explained if the provocation of Hawaiians was a societal stereotype—given that stereotypes are linked to false memory generation. Future studies should investigate this unique source of false memory and the possibility of multidirectional stereotype activation in memory biases.

3. *Instances of Failed Recall and False Memory in Employment Story.* Participants exhibited better memories for the employment

267. Fight Dependent Variable Number Sixteen. See *infra* Appendix A.

268. A false memory in this case would thus involve a source attribution error.

269. A chi-square analysis indicated that results were significant for Hawaiians compared to Caucasians, $p < .05$, and Hawaiians compared to African Americans, $p < .05$.

270. Eric Yamamoto, *The Significance of Local*, in *SOCIAL PROCESSES IN HAWAII* 138, 138–49 (Peter Manicus ed., 1974).

271. The existence of positive and negative stereotypes about a group of people should not be surprising and has been documented in psychological studies such as the IAT.

scenario than for *The Confrontation*.²⁷² Overall, participants had a 94 percent recall accuracy rate for the employment scenario and a 71.2 percent recall accuracy rate for *The Confrontation*. Similarly, participants made fewer false memory errors for the employment scenario than they did for *The Confrontation*. Participants exhibited a 15.2 percent false memory rate for the employment scenario compared to a 34 percent false memory rate for *The Confrontation*. Though the stories read by participants were not exceedingly simple, they were significantly simpler than the stories typically heard by jurors, and somewhat simpler than other memory studies on juries or mock juries.²⁷³ The results indicate that the employment scenario was perhaps too easy for participants to recall. Yet, it is unclear why *The Confrontation*, also a simple story, generated significant errors whereas the employment story did not. One possibility (consistent with memory error research) is that *The Confrontation* contained more racially stereotyped facts than the employment story, which made errors more likely to occur when the actor's race was varied. Despite the few significant results that were obtained in the employment study, the employment discrimination arena should not be discounted when discussing memory errors. Future tests should examine the employment domain in more realistic and more stereotype-consistent situations.²⁷⁴ Researchers might also consider varying gender in addition to race, as gender has been shown to trigger stereotype-consistent false memories in the employment context.²⁷⁵

Within the employment story, though the indexes did not reveal significant effects, an interesting and significant false memory did emerge.²⁷⁶

272. These results are not due to the order in which the stories were presented. To eliminate order effects, participants were presented the scenarios in both orders.

273. Compare the case fact data presented in the memory study conducted by Pritchard & Keenan, *supra* note 8. In that study, participants viewed a thirty-five minute video of court testimony and were quizzed for recall. *Id.* at 593–94. The test in this study was substantially easier.

274. It would also be interesting to test an employment scenario detailing a management-level job rather than an entry-level job. Stereotypes about certain groups may be more likely to function in a job with significant responsibility than in a job closer to entry level.

275. See Lenton et al., *supra* note 152, at 9–11; Macrae et al., *supra* note 152, at 74.

276. Two other facts in this story generated at least marginally significant results. Employment Dependent Variable Number Twelve, see *infra* Appendix A, *Brenda was allowed a one hour lunch break* (an accurate memory), generated significant results, $p < .05$, such that participants made more recall errors for this fact when reading about Brenda compared to

*Example 5 (Competence—False Memory): “[Brenda/Ka’olu/Keisha] was named Employee of the Month.”*²⁷⁷

This statement was inaccurate. Participants who had false memories of this statement erroneously believed that the employee achieved this honor. In the story, it was the employee’s father, not the employee, who earned this award. The results indicated that participants who read about Brenda, compared to those who read about Keisha and Ka’olu, were more likely to have false memories of the employee achieving this honor.²⁷⁸ Participants who read about Brenda had false memories of it 17 percent of the time whereas participants who read about Keisha and Ka’olu had false memories of it 10 percent and 2 percent, respectively.²⁷⁹

4. *Implicit Memory Bias and Explicit Racial Preferences.* I next measured whether there was a relationship between explicit racial preferences (as measured by the SDO scale) and memory recall. For memory recall indexes (such as the aggression recall index for *The Confrontation*) and for most individual memory recall measures, there was no significant relationship between memory recall and explicit racial preferences. This finding indicates that participants who manifested more memory bias were not more likely to be explicitly biased. A few individual instances of memory recall in the African-American and Hawaiian experimental conditions, however, did indicate a relationship (both correlative and predictive) in the opposite direction. That is, in a few instances people with lower SDO scores (indicating less explicit racism) were actually more likely to demonstrate more racially biased recall than people with higher SDO scores.

Keisha or Ka’olu. In addition, Employment Dependent Variable Number Five, *see infra* Appendix A, *Brenda frequently surfed the web* (also an accurate memory), generated marginally significant results, $p < .07$. This result indicated that participants who read about Keisha made more recall errors for this fact compared to those who read about Brenda or Ka’olu.

277. Employment Dependent Variable Number Two. *See infra* Appendix A.

278. A chi-square analysis revealed that this effect was significant, measuring all three race conditions against each other, $p < .05$.

279. It would be premature to make conclusions based upon this lone significant finding or upon the other at least marginally significant results described *supra* note 266. One possibility worth investigating, however, is whether such memory errors made by corporate managers, for example, could retrospectively and unknowingly bolster performance evaluations or promotion decisions of a Caucasian employee relative to an African-American or Hawaiian employee.

I tested the correlation between the memory measures (both indexes and individual questions) and total SDO scores for participants in each race condition, and followed these correlations up with linear regression analyses. For the memory index responses and most individual memory questions, no significant results emerged. For a few individual memory measures, however, significant correlations and predictive relationships emerged. The following examples illustrate this unexpected effect.

Significant correlations emerged in the African-American experimental condition for SDO scores and the following memory measures: (1) *After James fell to the ground, Tyronne kicked him* (false); and (2) *When Tyronne hit James in the face, he was really trying to push him rather than punch him* (true). The first memory measure above was negatively correlated to SDO score and the second was positively correlated to SDO score.²⁸⁰ Because the first statement is false and the second statement is true, these opposite correlations indicate that participants who explicitly favored racial equality were (1) more likely to have false memories that Tyronne kicked James and (2) less likely to recall accurately that Tyronne was trying to push James rather than punch him. Linear regression analyses were also significant for these measures, indicating that SDO scores served as predictors for these two memory measures in the same surprising direction. These two examples provide counterintuitive results, indicating that participants who explicitly favored more social equality sometimes were more likely to recall facts in biased ways than those who explicitly favored less social equality.²⁸¹

In the Hawaiian experimental condition, a significant correlation emerged between memory recall and SDO score for the memory measure *Ka'olu used her phone to make long distance calls*. This memory measure was significantly correlated with overall SDO score in the negative direction.²⁸² This correlation means that the more likely participants were to favor equality (generating a lower SDO

280. Two-tailed Pearson correlations were significant for both of these memory measures, $p < .05$.

281. It should be noted that the relationship between SDO scores and implicit measures are relative. That is, people who favor "less social equality" did not necessarily disapprove of social equality and were not necessarily explicitly racist. Instead, relative to other participants in the study, those who favored less equality were more likely to respond to certain questions in the manner reported.

282. A two-tailed Pearson correlation was significant for this measure, $p < .05$.

score), the more likely they were to remember accurately this fact about Ka'olu. A linear regression analysis was also significant for this memory measure, indicating that SDO score served as a negative predictor of this accurate memory recall response.²⁸³

Taken together, the correlation and regression results indicate that explicit racial preferences and implicit recall bias usually were not significantly related. In the African-American and Hawaiian conditions, however, there were individual instances in which lower explicit bias actually predicted greater memory bias. In the Caucasian condition, there was one instance in which higher explicit bias predicted greater memory bias.²⁸⁴

IV. IMPLICIT BIASES, CULTURAL RESPONSIBILITY, AND DEBIASING

The results of the empirical study, combined with existing research on implicit social cognition and memory, lead to the conclusion that implicit memory biases most likely operate in legal decisionmaking. The implications of this conclusion should raise concern: the legal system simultaneously embraces a mission of social justice while employing an implicitly biased decisionmaking process that hinders justice from being done. But how should lawmakers and scholars approach this problem? Research has shown that memory errors are pervasive, meaningful, and hard to correct.²⁸⁵ Similarly, social scientists have demonstrated that implicit biases are "widespread"²⁸⁶ and frequently resistant to intervention. Thus, a multifaceted approach must be considered.

283. The linear regression analysis was significant, $p < .05$. A regression also indicated that a neutral memory measure, *Ka'olu worked as a marketing clerk*, was also predicted by SDO by regression in the negative direction, $t = -2.39$, $p < .05$.

284. In the Caucasian experimental condition, a two-tiered Pearson correlation coefficient was significant (in the positive direction) between memory recall and SDO score for the measure *William and his friend hit James one time each*. This measure indicates opposite results than those in the African-American and Hawaiian conditions. The more likely participants were to favor racial and social hierarchy explicitly (generating a higher SDO score), the more likely they were to have false memories of this (mitigating) fact favoring William (recall from the story that William actually hit James twice). A linear regression analysis was also significant for this memory measure, indicating that SDO score served as a predictor of this false memory response. The linear regression analysis was significant, $t = 3.11$, $p < .05$. Thus, unlike the instances in the African-American and Hawaiian conditions indicating lower explicit racial preferences sometimes served as a predictor of implicit memory bias, this instance indicated that higher explicit racial preference predicted implicit memory bias.

285. See *supra* Part II.A.

286. See Lane et al., *supra* note 44, at 12.

This Part discusses potential responses to implicit memory bias and argues that both debiasing and cultural solutions must be pursued. A debiasing²⁸⁷ solution responds to implicit memory bias by using interventions such as exposure to “counterstereotypes”²⁸⁸ to lessen the negative effects of implicit bias during legal decisionmaking.²⁸⁹ A cultural solution requires recognizing the link between historical and societal discrimination and the continued exhibition of implicit biases. Taken together, these approaches hold promise that implicit memory bias may someday be significantly reduced or even eliminated.

A. *Debiasing of Memory Errors and Stereotypes*

Debiasing efforts have significant practical potential to reduce or temporarily eliminate implicit memory biases.²⁹⁰ A debiasing approach to the problem of implicit memory bias can involve two interrelated tactics—improving overall memory accuracy and reducing the strength, frequency, or pervasiveness of implicit racial biases. Both types of tactics provide clues as to how taking specific procedural actions within the legal system can reduce the harmful effects of implicit memory bias.

1. *Improving Memory Accuracy and Reducing False Memories.*

Two different styles of memory improvement efforts might help mitigate the effects of implicit memory bias. First, research on reducing memory errors offers clues about how jury instructions or other debiasing measures might help mitigate memory inaccuracies. These projects often suggest that implementing “late correction” strategies can reduce some memory errors, although the reduction of

287. A debiasing methodology uses experimental interventions to lessen the severity or temporarily halt implicit biases. See, e.g., Kang, *supra* note 3, at 1580; Kang & Banaji, *supra* note 44, at 1101–08; Page, *supra* note 22, at 239.

288. Exposure to “counterstereotypic[] exemplars” is one of the “fair measures” proposed by Kang & Banaji, *supra* note 44, at 1105. Such an example shows why cultural change and debiasing are not necessarily mutually exclusive. Kang and Banaji suggest that using “debiasing agents” might over time help reduce stereotypes by changing the way people think about social categories. See *id.* at 1108. This link between cultural change and science exemplifies the potential power of embracing the “fair measures” model Kang and Banaji suggest.

289. As I use the term in this Article, debiasing solutions also include taking practical interventions such as bolstering juror access to information during and after trial.

290. There are also theoretical implications. Debiasing studies may offer clues as to why the pervasive effects of implicit biases continue to prosper in people’s automatic cognitive processes.

stereotype-related memory errors has proved particularly challenging. Second, practical solutions such as juror note taking and question asking can help improve memory retention in the legal process. Though these strategies have not been investigated with regard to racial memory biases, they offer hope that general memory improvement will help reduce racially biased errors.

In light of the compelling evidence linking false memory generation to stereotypes, researchers have begun exploring ways to try to moderate the potentially harmful effects of stereotype-consistent false memories. These efforts have yielded mixed success and serve as a reminder that trying to reduce the harmful effects of stereotypes is a difficult process. Keith Payne and his colleagues examined whether instructing participants to respond to memory tasks based on their confidence levels might help reduce stereotype-consistent false memories.²⁹¹ If stereotype-consistent false memories emerge only when people make guesses, they hypothesized, then instructing people to answer only when they are subjectively confident in their memory should eliminate stereotype-consistent false memories.²⁹² The results of the study indicated that giving such instructions helped improve general memory accuracy, but did not reduce the amount of stereotype-consistent false memories. In fact, participants were just as likely to display stereotype-consistent false memories when they expressed 100 percent certainty in their memory judgments as when they expressed zero certainty.²⁹³ Encouraging jurors to rely on their memory confidence levels, then, appears to be a less than promising way of reducing memory errors. The study also raises the concern that taking steps to improve general memory accuracy, as I propose elsewhere, will not necessarily lead to reduction in stereotype-consistent memory errors. Other studies provide a little more optimism for generating a legal process response to implicit memory bias. Such a response might involve employing

291. B. Keith Payne et al., *Memory Monitoring and the Control of Stereotype Distortion*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 52, 53 (2004).

292. *See id.* at 54. In part I of the experiment, participants performed a memory test in which they studied a list of "Black" and "White" names (those typically associated with Black or White individuals), which were randomly grouped together with one of two occupations (basketball player or politician), typically associated with Black or White individuals. *Id.* at 55. As in other studies described, results for this test indicated the expected stereotype-consistent false memories. *Id.* at 56.

293. *See id.* at 58.

debiasing tasks in connection with jury instructions to reduce stereotype-consistent false memories.

a. Late Correction Memory Strategies. Richard Marsh and his colleagues found that using conscious memory control processes may reduce people's reliance on stereotypes in making source attributions. Participants viewed a series of gender-stereotype-consistent statements (such as "I made a centerpiece for the dining table") along with the gender-neutral name of the person who made the statement.²⁹⁴ After a distraction task, the experimenters revealed the gender and sexual orientation of the people who made the statements. They then asked participants to recall who made the statements. Results indicated that gender and sexual orientation stereotypes consistently influenced source attribution errors. For example, participants overattributed stereotypically male statements to heterosexual males and homosexual females.

The experimenters next tested whether "late correction" memory strategies might reduce or eliminate the source attribution bias. Before responding to the recall task, participants were told to list reasons why they believed stereotypes were harmful in today's society.²⁹⁵ Implementing this simple task reduced some but not all source attribution errors. For example, participants became more accurate in attributing masculine-stereotyped statements to homosexual males.²⁹⁶ The moderate success in correcting stereotype-consistent source attribution errors indicates that late correction memory strategies hold promise for reducing legal errors based on stereotypes. In keeping with "late correction" delivery, these correction strategies could be implemented simultaneously with jury instructions.²⁹⁷ Practical problems, however, might arise in the jury context with a debiasing task that requires jurors to make a list about

294. Richard L. Marsh et al., *Gender and Orientation Stereotypes Bias Source Monitoring Attributions*, 14 *MEMORY* 148, 150–51 (2006). This was the methodology for the first portion of the study.

295. *Id.* at 156. In keeping with the late correction theory, participants made this list between viewing the statements and recalling who made the statements. *Id.* at 156–57.

296. *Id.* at 157. The instruction, however, did not significantly reduce source attributions relying upon the "masculine" stereotype of homosexual females and only slightly reduced the number of total attribution errors made.

297. Other commentators concerned with juror information-processing inefficiencies have argued for debiasing instructions. *E.g.*, Prescott & Starr, *supra* note 181, at 342 (stating that such debiasing instructions can "hardly hurt"). The efforts I propose could be combined with such efforts.

the harms of stereotypes to effectively debias. Yet it is too early to rule out any solutions, even potentially impractical ones.

b. Juror Note Taking and Question Asking. Another type of memory debiasing takes advantage of procedural tasks such as note taking to combat memory errors. One of the more popular arguments in support of juror note taking is the commonsense expectation that note taking allows jurors to refresh their memories.²⁹⁸ Benefits of note taking have been verified empirically. In one such study, Professors Horowitz and ForsterLee found that mock jurors who were allowed to take notes during a mock trial did a better job of assessing relevant factual information, including distinguishing between "differentially worthy plaintiffs."²⁹⁹ This increased accuracy level exceeded much smaller improvements shown by mock jurors who did not take notes but had transcript access.³⁰⁰

Because the trial judge makes decisions regarding note taking in most jurisdictions,³⁰¹ keeping track of statistics on the prevalence of juror note taking is difficult. If the vast majority of courts already allow or even encourage note taking, then suggesting note taking reforms becomes superfluous. Studies, however, reveal mixed results. A 1988 survey by Larry Heuer and Steven Penrod indicated that approximately one-third of trial judges allow note taking at trial.³⁰² Since then, however, projects have pointed to a trend in allowing note taking, even calling the practice "widespread."³⁰³ Whatever the true estimate of juror note taking may be, judges should encourage jurors to take detailed notes of relevant facts.

298. Douglas G. Smith, *Structural and Functional Aspects of the Jury: Comparative Analysis and Proposals for Reform*, 48 ALA. L. REV. 441, 569 (1997).

299. Irwin A. Horowitz & Lynne ForsterLee, *The Effects of Note-Taking and Trial Transcript Access on Mock Jury Decisions in a Complex Civil Trial*, 25 LAW & HUM. BEHAV. 373, 374, 387 (2001).

300. *Id.*

301. Smith, *supra* note 298, at 568.

302. Larry Heuer & Steven Penrod, *Legal Institutions: Some Suggestions for the Critical Appraisal of a More Active Jury*, 85 NW. U. L. REV. 226, 229 (1990).

303. NANCY S. MARDER, *THE JURY PROCESS* 108 (2005) (citing JURY TRIAL INNOVATIONS 141 (G. Thomas Munsterman et al. eds., 1997)). This trend, in part, may be due to strong support for juror note taking by well respected organizations such as the American Bar Association and Brookings Institution. *Id.* at 109 (citing CHARTING A FUTURE FOR THE CIVIL JURY SYSTEM 18 (1992) (calling juror note taking the "most widely suggested reform for enhancing juror comprehension"))).

In addition to their calls for juror note taking reform, scholars concerned about juror memory errors and cognitive load outside of the implicit bias context have called for additional reforms such as question asking (where jurors may submit questions to the judge during trial) and jury discussions throughout the trial.³⁰⁴ These scholars have pointed out that “active juror” reforms improve juror information processing and self-monitoring.³⁰⁵ Encouraging wider-scale note taking, question asking, and transcript access might reduce implicit memory bias by bolstering overall memory accuracy. There is no evidence, however, that these steps reduce particular memory errors, generation of false memories, or stereotype-consistent memory bias. Further research should be conducted to determine whether these procedural steps, perhaps in combination with late correction memory control techniques (as implemented by Professor Marsh and his colleagues) can help reduce implicit memory biases. Researchers must also continue to investigate strategies to reduce or temporarily eliminate stereotype-consistent memory errors. Studies in this area have not been as successful as hoped, leading some researchers to conclude that the best way to change stereotype-consistent false memories is to change the stereotypes themselves.³⁰⁶

2. *Temporarily Reducing Implicit Biases.* A significant amount of research has focused on whether implicit biases can be temporarily eliminated or moderated.³⁰⁷ These efforts have achieved mixed levels of success, and indicate that exposure to diversity or viewing minority exemplars, for example, can sometimes temporarily reduce people’s implicit biases.³⁰⁸ None of this research has directly tested how implicit memory bias might be reduced, nor has it been applied to jury decisionmaking.³⁰⁹ Nevertheless, studies indicate that confronting jurors with their implicit biases, striving for more diverse juries, and facilitating a more counterstereotypic community of lawyers and judges could help reduce the occurrence of implicit memory bias. It must be noted, however, that before any concrete suggestions should

304. See Prescott & Starr, *supra* note 181, at 342.

305. *Id.* at 342–43.

306. See Sherman et al., *supra* note 197, at 238.

307. Some of these studies have been reviewed in other contexts. See, e.g., Kang, *supra* note 3, at 1494; Kang & Banaji, *supra* note 44, at 1065; Page, *supra* note 22, at 160.

308. Page, *supra* note 22 at 237 (citing Dasgupta & Greenwald, *supra* note 38, at 800).

309. But see *supra* note 252 and accompanying text.

be implemented, more research must be conducted to confirm that these changes would improve legal decisionmaking.

a. *More Counterstereotypic Attorneys and Judges.* Some studies indicate that exposing jurors to minority exemplars such as attorneys and judges might help reduce implicit memory bias. A study by Nilanjana Dasgupta and Anthony Greenwald found that exposure to admired minority exemplars can decrease implicit preferences.³¹⁰ After taking a Black-White IAT, participants viewed pictures of “famous and admired” African Americans, such as Denzel Washington, and “infamous and disliked” Caucasian Americans, such as Jeffrey Dahmer.³¹¹ After exposure to these pictures (which the experimenters presented under the guise of being a test of famous person recognition), participants immediately retook an IAT and took yet another IAT after twenty-four hours. Results indicated that the exposure to the African-American exemplars and disliked Caucasians reduced (but did not eliminate) automatic pro-White implicit bias, and that bias reduction continued for at least twenty-four hours.³¹²

A study by Dasgupta and Shaki Asgari harnessed this knowledge to test how exemplary leaders can affect women’s automatic biases about their own in-group.³¹³ The study indicated that exposure to women in leadership positions can lead to a reduction of in-group implicit biases among women.³¹⁴ One important contribution of

310. Dasgupta & Greenwald, *supra* note 38, at 806.

311. *Id.* at 802.

312. *Id.* at 803–04. These results were reported in contrast to participants in a control condition (who saw no images) and in a pro-White exemplar condition. The researchers also found similar effects in reducing implicit bias related to elderly. Interestingly, though a reduction in implicit attitudes was found, explicit racial preferences were not significantly altered. *Id.* at 805.

313. Nilanjana Dasgupta & Shaki Asgari, *Seeing Is Believing: Exposure to Counterstereotypic Women Leaders and Its Effect on the Malleability of Automatic Gender Stereotyping*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 642, 645 (2004).

314. *Id.* at 654. Other studies have investigated gender stereotype reduction using mental imagery. Unlike real-life exposure to counterstereotypic (human) exemplars as investigated by Dasgupta and Asgari, Irene Blair and her colleagues tested how simply imagining and then describing a “strong woman” (for example) might reduce implicit bias as measured on the IAT. Irene V. Blair et al., *Imagining Stereotypes Away: The Moderation of Implicit Stereotypes through Mental Imagery*, 81 J. PERSONALITY & SOC. PSYCHOL. 828, 829–30 (2001). Their results were significant, indicating that mentally accessing a counterstereotype can help reduce implicit bias. *Id.* at 837. Recent research also indicates that appealing to a person’s egalitarian beliefs can help moderate discriminatory behavior. Nilanjana Dasgupta & Luis M. Rivera, *From Automatic*

Dasgupta and Asgari's study was that it examined the role of exemplars in naturally occurring leadership roles (such as college students' exposure to female professors). Their results indicate that certain environments, such as those "in which women frequently occupy counterstereotypic leadership roles" can undermine automatic stereotypes.³¹⁵ Results such as these, which illustrate the debiasing potential of exemplars, prompted Professors Kang and Banaji to argue for "fair measures" in hiring more counterstereotypic employees.³¹⁶ Implementing a fair measures paradigm in the legal profession (which would include a systematic effort to increase counterstereotypic law students, lawyers, and judges) could eventually generate debiasing benefits in jury decisionmaking.³¹⁷

b. Confronting Jurors with Biases. Research indicates that explicitly confronting people with their biases may be an effective tool in decreasing stereotyped responses. A study by Alexander Czopp and his colleagues found that even though confrontations can create hostility toward a confronter, they can (at least temporarily) also reduce stereotypes.³¹⁸ The study asked participants to participate in an online chat.³¹⁹ During this chat, the experimenters asked participants to give their impressions about pictures and statements. These pictures and statements were designed deliberately so that they would invoke at least some racial stereotypes, thus assuring that participant responses would be racially stereotype-consistent enough to allow for confrontation.³²⁰ After the participants gave such stereotype-consistent responses, a collaborator (who was posing as another participant in the online chat) confronted them about their potentially racist responses.³²¹ After the confrontation, participants

Antigay Prejudice to Behavior: The Moderating Role of Conscious Beliefs About Gender and Behavioral Control, 91 J. PERSONALITY & SOC. PSYCHOL. 268, 270 (2006) (testing the relationship between egalitarian beliefs and anti-gay behaviors).

315. Dasgupta & Asgari, *supra* note 313, at 654.

316. Kang & Banaji, *supra* note 44, at 1066-67.

317. It is hard to predict, however, how positive effects of an African-American attorney or judge, for example, would interact with the negative effects of a stereotype-consistent African-American criminal defendant.

318. Alexander M. Czopp et al., *Standing up for a Change: Reducing Bias through Interpersonal Confrontation*, 90 J. PERSONALITY & SOC. PSYCHOL. 784, 799 (2006).

319. *Id.* at 787.

320. *Id.* at 787-88.

321. *Id.* at 792. For example, one resembled the following: "but maybe it would be good to think about Blacks in other ways that are a little more fair? it [sic] just seems that a lot of times

were given a confidential stereotype test (participants were alone—no collaborator was present to influence or confront them). The researchers found that post-confrontation participant responses displayed significantly fewer stereotypes (compared to responses given before the confrontation). One potential practical implication of this line of research involves using racial stereotype measures on pretrial jury questionnaires, and nonthreateningly confronting jurors with their biases during voir dire or jury instructions.³²²

c. More Diverse Juries. Studies have linked culture and diversity to the reduction of implicit biases. These studies indicate that racially diverse juries, for example, may make fewer cognitive errors than homogeneous jurors, and that learning about or experiencing diversity and multicultural ideologies in general can reduce implicit bias. In a study of legal decisionmaking processes, Samuel Sommers recorded and evaluated mock jury deliberations.³²³ Some mock juries included only Caucasians and others included both Caucasians and African Americans.³²⁴ Sommers found that racially heterogeneous mock juries cited more facts from the case, made fewer errors when discussing facts (and when they did make errors, were more likely to correct them³²⁵), and were more open to discussing racism than homogeneous Caucasian juries.³²⁶ Although

Blacks don't get equal treatment in our society. you [sic] know what i [sic] mean?" *Id.* at 788. The confrontations were successful using low-level threats (such as the one quoted) and high-level threats (which involved mentioning that the participant's responses sounded racist). *Id.* at 791.

322. The exact method of how to nonthreateningly confront jurors should be studied carefully. In choosing a starting point for such studies, it would wise be to consider that individual jurors should not feel singled out or blamed for their implicit attitudes (that is, they should understand that implicit bias is common and difficult to control). It is important to note that there are no indicators yet that such a juror confrontation would reduce implicit bias in the legal setting. Before implementing any juror confrontation scheme, the specific design should be tested empirically. Debiasing judges through confrontations would require other measures, but could perhaps be done in connection with diversity training courses.

323. Sommers, *supra* note 252, at 600.

324. *Id.*

325. Recall that in Prichard and Keenan's study, jury deliberation barely helped correct individual memory errors. See Prichard & Keenan, *supra* note 8, at 600. Although Sommers did not employ a methodology designed to test the statistical significance of memory error correction generally, his study raises the possibility that diverse juries (which were not reported and presumably not tested by Prichard and Keenan) might have a unique ability to correct more memory errors than homogeneous juries. Such a theory should be tested empirically. See Sommers, *supra* note 252, at 608.

326. *Id.* at 605–06.

Sommers did not test implicit bias reduction, the results hold promise that diverse juries might better overcome implicit memory biases than homogeneous juries. In practice, however, calling for more diverse juries is controversial. Courts are hesitant to apply diversity rationales to petit juries, and will generally look only at juror representation across a larger community.³²⁷ If other measures are less effective in overcoming implicit memory bias, however, then striving for (or even requiring through legislation) heterogeneous juries might be warranted, particularly when from the case facts involve members of stereotyped groups.

d. Juror Diversity Training. Implementing diversity or multiculturalism training for jurors might similarly help reduce memory biases. A study by Jennifer Richeson and Richard Nussbaum found that exposing participants to a multicultural viewpoint, compared to a “color-blind” viewpoint, resulted in lesser implicit bias on the Black-White IAT.³²⁸ In that study, participants learned about either the virtues of multiculturalism (celebrating differences across groups) or color blindness (ignoring differences across groups).³²⁹ This simple introduction to the two ideologies was enough to affect IAT outcome.³³⁰ Those who learned about multiculturalism reduced their implicit biases and displayed significantly less implicit bias than those who learned about color-blindness.³³¹

A study by Laurie Rudman and her colleagues tested the effects of a diversity education program and found similar results to Richeson and Nussbaum, indicating that learning the values of diversity can at least temporarily reduce implicit bias.³³² In that study, participants voluntarily attended a fourteen-week diversity and

327. Nancy S. Marder, *Juries, Justice & Multiculturalism*, 75 S. CAL. L. REV. 659, 668 (2002) (citing *Taylor v. Louisiana*, 419 U.S. 522, 538 (1975)).

328. Jennifer A. Richeson & Richard J. Nussbaum, *The Impact of Multiculturalism Versus Color-Blindness on Racial Bias*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 417, 420 (2004).

329. *Id.* at 419. The learning process included reading about multiculturalism or color-blindness as well as writing about it. *Id.*

330. *Id.* at 420.

331. *Id.*

332. Laurie A. Rudman et al., *Unlearning Automatic Biases: The Malleability of Implicit Prejudice and Stereotypes*, 81 J. PERSONALITY & SOC. PSYCHOL. 856, 865 (2001). The researchers did point to evidence, however, that forced compliance with “pro-Black” requests can result in anger and backlash. *Id.* at 857 (citing E. A. Plant & Patricia G. Devine, *Responses to Other Imposed Pro-Black Pressure: Acceptance or Backlash?*, 37 J. EXPERIMENTAL SOC. PSYCHOL. 486, 491 (2001)).

conflict seminar, during which they learned about intergroup conflict, engaged in discussions, and kept a journal.³³³ Experimenters gave participants IAT tests both prior to and after the semester. Results indicated that students in the diversity and conflict seminar reduced both their implicit racial biases (as measured by the IAT) and explicit racial biases, whereas those in the control group (who received no diversity training) did not.³³⁴ These studies indicate that diversity or multiculturalism training could potentially help jurors reduce implicit racial biases. Yet implementing a mandatory diversity course, for example, could backfire if jurors became angry about being required to participate (an emotion that could be common considering that people are often unaware of their implicit biases). Thus, before implementing training, further research should be conducted to test what types of training programs jurors would tolerate without backlash.³³⁵ One possibility is that diversity training would perhaps generate less resistance from jurors if it were a component of a larger juror education or training program.

A large volume of work supports the theory that increasing an understanding of out-group members will lead to reduction in prejudice³³⁶ (in the language of intergroup contact theory, "familiarity breeds liking"³³⁷). This work reaffirms that exposure to people across groups acts to reduce biases, particularly under optimal conditions. A

333. *Id.* at 858. Other participants, who were in the control group, were enrolled in a research methods course. *Id.* It is interesting to note that (in the first experiment conducted) participants in the training group were taught by an African-American professor while participants in the control group were taught by a Caucasian professor. *Id.* Thus, effects generated between the two groups might have emerged from effects similar to those demonstrated by Dasgupta & Asgari, *supra* note 313, at 806. The experimenters corrected this potential confound in the second experiment by having the same African-American professor teach the control group's course. Results in experiment 2 indicated the same bias-reduction results as in experiment 1—for the experimental group but not for the control group. Rudman et al., *supra* note 332, at 863–64.

334. Dasgupta & Asgari, *supra* note 313, at 860–61.

335. Jury training has been suggested in other contexts. *See, e.g.*, Stephen E. Fienberg & Mark J. Schervish, *The Relevance of Bayesian Inference for the Presentation of Statistical Evidence and Legal Decisionmaking*, 66 B.U. L. REV. 771, 771 (1986) (advocating juror instruction in Bayesian statistical probabilities); James J. Gobert, *In Search of the Impartial Jury*, 79 J. CRIM. L. & CRIMINOLOGY 269, 326 (1988) (suggesting that juror "impartiality training" be implemented); Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67, 132–34 (2002) (discussing training effectiveness generally and applying it to judges).

336. Thomas F. Pettigrew & Linda L. Tropp, *A Meta-Analytic Test of Intergroup Contact Theory*, 90 J. PERSONALITY & SOC. PSYCHOL. 751, 766 (2006).

337. *Id.*

meta-analysis by Thomas Pettigrew and Linda Tropp demonstrated that across hundreds of studies, intergroup contact does in fact lead to prejudice reduction.³³⁸ The researchers found that intergroup contact that comported with Allport's 1954 formulation of "optimal contact" created the most prejudice reduction. These optimal contact conditions include equal status, common goals, intergroup cooperation, and the support of authority, such as the law.³³⁹ Interestingly, Allport's optimal conditions appear to describe the mandate, function, and process of juries. Thus, the possibility is raised not only that diverse juries may display less prejudice (as investigated by Sommers³⁴⁰), but also that the experience of being on a diverse jury itself could lead to less future prejudice.³⁴¹

3. *Future Directions.* The ways in which implicit biases can be moderated and memory errors reduced provide hope for bias reduction and demonstrate the importance of future research. The research I have described indicates that although much progress has been made, greater efforts are needed. Implicit racial biases are elicited quickly and easily, and can only be temporarily reduced through interventional approaches. Biased memory errors, too, have resisted correction. Though general memory has been shown to improve with procedural measures, researchers are only beginning to understand how stereotype-consistent memory errors might be reduced. The effort in both of these areas must continue so that a comprehensive legal model of implicit memory bias-reducing measures can be developed.

B. Cognitive Biases, Cultural Change, and Social Justice

Although debiasing alone could potentially succeed in at least temporarily reducing the harms of implicit memory bias, a permanent elimination of the bias (and implicit biases generally) will best occur

338. *Id.* The positive effects were not limited to perceptions of other group members. *Id.*

339. *Id.* at 752 (citing GORDON ALLPORT, *THE NATURE OF PREJUDICE* 281 (1954)). The meta-analysis indicated that these conditions are best viewed as a "bundle" (meaning that they are most effective if all conditions are met). The researchers do note, however, that the institutional support criterion might be especially important. Prejudice can still be reduced without the presence of the optimal conditions though. *Id.* at 766.

340. Sommers, *supra* note 252, at 608.

341. See Pettigrew & Tropp, *supra* note 336, at 768 (noting that although there are some indicators that intergroup contact reduces future prejudice, more longitudinal studies are needed).

through a sustained process of cultural change. There are three primary reasons why cultural change is the best way to deal with implicit memory biases. First, research has connected stereotypes, one of the building blocks of implicit memory bias, to deep societal and scientific roots and shown that they become socially ingrained and resistant to change at a very early age.³⁴² Although debiasing measures might temporarily moderate or reverse a negative stereotype, the only way to avoid a negative stereotype completely is to remove that stereotype from the socializing forces of the culture. Second, scholars have demonstrated that people manifest implicit desires to maintain social order (as illustrated by System Justification Theory), even when such desires subordinate socially disfavored groups and are inconsistent with their explicit attitudes.³⁴³ Although a debiasing intervention may be able to temporarily moderate an implicit desire to subordinate a disfavored group, the best way to avoid implicit subordination is to remove the socially disfavored status of a subordinated group. Such a change can best be made at a cultural level. Third, unlike debiasing measures, which may be highly scientific and sometimes cognitively inaccessible to laypersons, cultural change can be part of a larger movement to achieve social equality, healing, and the overcoming of historical injustice.

Achieving cultural change is not a simple task. It must be accomplished using mixed methodologies. One multimethod approach to cultural change is proposed by Rudman, who presents several suggestions consistent both with cultural responsibility and scientific theory.³⁴⁴ These suggestions include combining elements of education, policy advocacy, intergroup contact, and social inclusiveness in order to achieve change. Legal scholars should take note that these solutions are neither entirely empirical nor are they primarily debiasing-focused. Instead, they are diverse in methodologies and reflect a broader understanding of implicit biases as a societal problem. Specifically, Rudman calls for informing people about implicit biases, followed by “efforts to retain and expand policies that serve to override them, including affirmation action”,³⁴⁵

342. See *supra* notes 86–89 and accompanying text.

343. See Blasi & Jost, *supra* note 81, at 1142; Jost et al., *supra* note 80, at 912; Rudman, *supra* note 31, at 133.

344. Rudman, *supra* note 31 at 138–39.

345. *Id.* at 138 (pointing out the overly optimistic nature of affirmative action’s twenty-five year “shelf life” under *Grutter v. Bollinger*, 539 U.S. 306 (2003)). These suggestions are

providing people the opportunity to be more emotionally comfortable with out-group members;³⁴⁶ and recognizing the cultural influences on the self while striving for a more inclusive society. These proposed solutions provide legally relevant pathways that can be implemented to eventually reduce the harmful effects of implicit memory bias. In fact, scholars have already begun embracing each of these suggestions. Professors Kang and Banaji have argued that “fair measures” must be taken specifically to combat the societal harms of implicit biases.³⁴⁷ Scholars of intergroup contact have confirmed that sharing experiences with out-group members truly works to reduce biases.³⁴⁸ And legal commentators beginning with Charles Lawrence have recognized the importance of recognizing culture’s influences on the self within a broader legal and societal context.³⁴⁹ It is now time to coordinate these efforts for change.

Ignoring cultural responsibility for implicit racial biases is not simply a failure to connect the cause of the bias to the bias itself or a failure to develop an accurate model of legal decisionmaking. Instead, ignoring the cultural foundations of implicit bias risks minimizing the responsibility of the legal system to deal with a society that continues to exhibit systematic racial preferences. A debiasing framework, acting alone and without cultural context, thus risks ignoring the social justice mission of the law.³⁵⁰ When Charles Lawrence first wrote about unconscious racism, he was not simply saying that people act unconsciously in biased ways. He was saying that people are unconsciously racist and that American culture is responsible.³⁵¹ Thus, as scholars digest yet again the newest piece of evidence that implicit

supported in part by Kang and Banaji’s “fair measures” proposal, which uses a variety of evidence on implicit bias to propose a multifaceted framework for progress. See Kang & Banaji, *supra* note 44, at 1065–66.

346. See the discussion of intergroup contact theory, *supra* notes 336–41 and accompanying text.

347. See Kang & Banaji, *supra* note 44, at 1067.

348. Pettigrew & Tropp, *supra* note 336, at 766.

349. See Lawrence, *supra* note 3, at 323.

350. More detailed discussions of racial history, the American culture of discrimination, and its links to equal protection admittedly occur outside the mostly scientific scope of this paper. Nonetheless, each of these components must be discussed in the context of implicit racial bias. See generally Lawrence, *supra* note 3 (discussing race in the context of equal protection jurisprudence); Yamamoto, *supra* note 134 (focusing on cultural responsibility in race relations). “Debiasing” by its nature is not always culturally ignorant. Kang and Banaji’s model, for example, uses debiasing concepts to effectuate slow cultural change. See Kang & Banaji, *supra* note 44, at 1108–10.

351. See Lawrence, *supra* note 3, at 324.

bias manifests in the legal system, it must be understood that the deviation from rational decisionmaking is not simply a cognitive glitch, but a meaningful cultural statement that reflects the way people unknowingly carry society's weaknesses with them at all times, even when encoding and recalling the simplest of facts. Dealing with implicit racial biases, then, requires more than a scientific effort at debiasing through cues and primes.³⁵² It requires a recognition that their very existence reflects the state of American culture. And this recognition, in turn, calls for steps that will facilitate cultural change.

CONCLUSION

How can the American legal system stand for justice and fairness when it embraces a decisionmaking process that propagates racial bias? The automatic and pervasive nature of implicit memory biases highlights the difficulty of finding a solution for this moral and practical conundrum. As I have argued, the only surefire solution for implicit memory bias is cultural change. When racial stereotypes no longer disproportionately link minorities to negative traits, implicit memory biases will disappear. In the meantime, however, some important temporary measures may help lessen the harmful racial effects of implicit memory biases. Nonetheless, more research is needed. This research should aim to reveal the nature of memory biases themselves and the ameliorating efforts that will aid the battle against biases in legal decisionmaking. Research should also be conducted across legal disciplines to determine the pervasiveness of implicit memory biases. These projects might include examinations of decisionmaking processes in areas such as employment discrimination, property ownership, death penalty, intellectual property, and more.

Although the legal decisionmaking implications are challenging enough, implicit memory biases have implications beyond the legal system. If they are as pervasive as the research tends to indicate, they may affect decisions both big and small—from committees deciding which applicant to admit or job seeker to hire (perhaps misremembering qualifications) to a donor deciding how much money to donate to a charity (perhaps misremembering reputation or

352. Because cultural change, however, is a major endeavor and will happen slowly (and may not happen at all without a sustained effort), the scientific endeavor will continue to be at the forefront of implicit bias discourse.

past performance). Future research should thus be conducted not only within the legal setting. Only through these projects can legal scholars begin to fashion a sophisticated response to the harms caused. In the meantime, however, so long as implicit biases go unchecked in legal decisionmaking, it is hard to be confident that social justice is at hand.

APPENDIX A: DEPENDENT VARIABLE MEASURES

Below is a list of facts. Some of the facts below accurately describe the case you read. Other facts below do not accurately describe the case you read. Please circle “Y” (for “yes”) next to the facts that are accurately reported from the case. If a fact does not accurately describe the information you read, or if the fact was not in the case at all, circle “N” (for “no”).

- | | |
|---|-----|
| 1) James smiled at William after spilling beer on him. | Y/N |
| 2) William and his friend hit James one time each. | Y/N |
| 3) William and James first encountered each other in a bar. | Y/N |
| 4) William wore a tee shirt and jeans. | Y/N |
| 5) After James said “Let it go,” William replied by saying “What if we won’t let it go?” | Y/N |
| 6) William hit James in the face immediately after James shoved William’s friend. | Y/N |
| 7) After being punched, James took out an object from his pocket. | Y/N |
| 8) Before going to the bar, William and his friend ate at a local diner. | Y/N |
| 9) James worked as a plumber. | Y/N |
| 10) William punched James from behind. | Y/N |
| 11) William and his friend followed James as he left the bar. | Y/N |
| 12) After James fell to the ground, William kicked him. | Y/N |
| 13) When William hit James in the face, he was really trying to push him rather than punch him. | Y/N |
| 14) When they saw him outside a diner, William and his friend approached James. | Y/N |
| 15) William was angry that James had spilled beer on him in the bar. | Y/N |
| 16) James shoved William. | Y/N |

APPENDIX A (CONTINUED)

Below is a list of facts. Some of the facts below accurately describe the case you read. Other facts below do not accurately describe the case you read. Please circle “Y” (for “yes”) next to the facts that are accurately reported from the case. If a fact does not accurately describe the information you read, or if the fact was not in the case at all, circle “N” (for “no”).

- | | |
|---|-----|
| 1) Brenda worked as a marketing clerk. | Y/N |
| 2) Brenda was named employee of the month. | Y/N |
| 3) Brenda’s employment contract stated that she should not be terminated without good cause. | Y/N |
| 4) Brenda had permission to use her computer for personal use, so long as it occurred during her fifteen minute breaks. | Y/N |
| 5) Brenda frequently surfed the web. | Y/N |
| 6) Brenda always completed her assigned work. | Y/N |
| 7) Brenda’s internet blog generated publicity and created new business. | Y/N |
| 8) Brenda worked for “Big Burger Company.” | Y/N |
| 9) Brenda’s employment contract stated that she could be terminated if she failed to comply with the employee handbook. | Y/N |
| 10) Brenda liked hamburgers but not french fries. | Y/N |
| 11) Brenda used her phone to make personal long-distance calls. | Y/N |
| 12) Brenda was allowed a one hour lunch break | Y/N |
| 13) Brenda was occasionally sloppy in her work. | Y/N |
| 14) Brenda worked longer hours than was required. | Y/N |
| 15) Brenda posted a blog complaining about the company’s burgers. | Y/N |
| 16) Brenda received mixed reviews from superiors. | Y/N |

APPENDIX B: INDIVIDUAL RECALL RESULTS

Measure	Accurate Fact?	Experimental Condition (Race of Story Character)		
		African American	Hawaiian	Caucasian
Aggression—Failed Recall: <i>When they saw him outside a diner, [Tyronne/Kawika/William] and his friend approached James.</i>	No	5	2	10
	Yes	45	46	44
Aggression—Failed Recall: <i>[Tyronne/Kawika/William] punched James from behind</i>	No	21	31	31
	Yes	30	17	23
Aggression—False Memory: <i>After James said 'Let it go,' [Tyronne/Kawika/William] replied by saying 'What if we won't let it go?'</i>	No	14	15	24
	Yes	36	33	30
Mitigating—False Memory: <i>James shoved [Tyronne/Kawika/William].</i>	No	24	12	23
	Yes	27	36	31
Competence—False Memory: <i>[Keisha/Ka'olu/Brenda] was named Employee of the Month.</i>	No	45	47	45
	Yes	5	1	9